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Original Communications.

AN OPHTHALMIC CLINIC AT THE JEFFERSON MEDICAL COLLEGE HOSPITAL.

BY G. E. DE SCHWEINITZ, A.M., M.D.,
Professor of Ophthalmology.

From a number of interesting cases which await our study I select several to illustrate various points in surgical ocular therapeutics.

CASE I.—*Nuclear Cataract and the Indications for Mydriatic Treatment on the One Hand and Optical Iridectomy on the Other.*—You are aware that opacities in the crystalline lens not only begin equatorially, that is, at the edge of the lens, but also centrally, that is, at or around the nucleus of the lens. In this second variety, or so-called nuclear cataract, the nucleus becomes hazy and the surrounding tissue cloudy. This cloudiness remains the most opaque portion of the cataract, which later may gradually spread to the cortex until the entire lenticular body loses its transparency, or, as we are wont to say, the cataract is ripe.

Very frequently these so-called nuclear cataracts remain for long periods of time unchanged—that is to say, the central opacity does not progress and the surrounding cortex remains unaffected; in fact, it is clear enough

to perfectly permit the rays of light to pass. The patient, however, is unable to obtain clear images of external objects because the iris covers the clear portion of the lens, the pupilary space being occupied by the cloudy part. If the opacity has not progressed far enough to render the extraction of an unripe cataract safe, or if the patient has not reached that age when we may disregard the ordinary indications of maturity and extract the lens even though a portion of it is still clear, the rules for which procedure I will discuss with you on some future occasion, we are compelled to search for some means to relieve the sufferer from a state of semi-blindness.

The first treatment that suggests itself in this type of incipient cataract, especially when the pupil is small, directly occupied by the opacity, and glasses cease to raise the visual acuity, is mydriasis. Often dilatation of the pupil will permit the patient to see through a peripheral portion of the crystalline lens and produce marked improvement in vision. If such a result follows the instillation of a mydriatic there should be a subsequent reexamination of the refractive error —that is to say, an examination of the refractive error while the pupil is dilated—and a glass may then be selected which will give the patient a surprising increase in visual acuity and afford the greatest comfort. The mydriasis should be maintained preferably with a solution of homatropine, half a grain or a grain to the drachm, which is instilled morning and evening, and the proper correcting glass, moderately tinted, should be ordered for constant use.

It should be remembered, however, that sometimes this daily mydriasis, associated with the wearing of the correcting lens, is followed by rapid increase in the lenticular opacity. Indeed, the procedure may act very much as a preliminary iridectomy does. One sometimes finds under these circumstances that the cataract on the side on which mydriasis has been maintained will mature more rapidly than the cataract upon the opposite side, although this was originally far more advanced in its opacification. There are many illustrations of this, and therefore you should always warn the patient that this may be the ultimate outcome of your treatment, which, indeed, is a fortunate outcome, because if complete opacification takes place, the lens may be safely extracted and a complete restoration of vision, such as occurs after removal of a cataract, secured.

Naturally, when a practically stationary nuclear cataract directly occludes the pupilary space and mydriasis indicates that the vision can be raised to double or triple that which the patient possesses when the pupil is of its natural size, an optical iridectomy, placed at the most advantageous position, is a perfectly proper surgical procedure and one which is constantly employed.

The patient before you, a woman aged sixty, has nuclear cataracts in each eye of the character which I have just described. They have been gradually developing for a number of years, and now with the pupils undilated the vision of the right eye is 6–CC and of the left eye 5–CC. Correcting glasses fail to increase this degree of vision. After complete mydriasis, however, they raise the vision to 15–CC, or about three times what it was before, and therefore it would seem a fair case in which to perform the operation of optical iridectomy, an operation to which I now proceed.

The patient has been submitted to the usual antiseptic precautions which you have seen employed in all cases operated upon in this clinic, namely, washing off the surface of the lids and the ciliary margins with soap and water, followed by a douche of bichloride of mercury 1:5000, after which a pad soaked in bichloride is allowed to remain on the lids for at least an hour prior to the operation. The conjunctival sac is thoroughly flushed with a saturated solution of boric acid and the nasal passages irrigated with a solution of permanganate of potassium 1:5000, after the manner recommended by Dr. J. A. Lippincott, of Pittsburg. Immediately preceding the operation three drops of a sterile four-per-cent solution of cocaine are dropped upon the corneal surface at intervals of five minutes, the eyes remaining closed between these instillations. Once more the conjunctival sac is flushed with boric acid solution and the cornea wiped with a pledget of cotton dipped in a solution of bichloride of mercury 1:10,000. At the point of selection a keratome is introduced at the corneoscleral margin and a small piece of the iris removed in the ordinary way, making, as you observe, on each side a small keyhole-shaped pupil. The eye is now washed with a sterile physiological salt solution, the edges of the coloboma carefully reduced, care being taken that none of the iris tissue is clamped in the wound, and both eyes are bandaged over a pad of lint moistened with the bichloride solution.

Before you undertake the operation of

optical iridectomy, however, I would direct your attention to one important point. Not infrequently, not only in eyes with nuclear cataracts, but in those in which in addition to the nuclear haze there are cortical striæ and opacities, mydriasis in the office or dispensary will materially improve vision, so materially, in fact, that one is tempted at once to perform the operation which you have just seen. When, however, the patient is allowed with dilated pupils to pursue his ordinary occupation, and compare his condition with his ability to carry on this same occupation when the pupil is undilated, he will not describe any particular advantage gained during the mydriatic stage. Under these circumstances optical iridectomy leaves the patient dissatisfied, unless it is explained to him that he cannot expect much gain in vision, but that it will render easier and safer the subsequent extraction of the lens. If, however, after trial of mydriasis, both in the office and outside of the office or dispensary, the patient returns stating that the increased visual acuity is a comfort, optical iridectomy followed by suitable correction is a very satisfactory procedure. It gives the patient a period of increased visual acuity, it renders the subsequent extraction of the lens easier, as before stated, provided one does not care to wait for maturity, and it often hastens maturity without the disadvantages of actually triturating the lens. We have sufficiently ascertained that the patient before us will receive the advantages which I have described, and therefore the iridectomies have been performed.

CASE II.—*Foreign Body (Piece of Steel) in the Vitreous; Localization by Means of the X-rays; Removal with the Electromagnet.*—The next patient, a man aged twenty-nine, while striking with a cold-chisel against a piece of iron, was struck by a small fragment of the metal in the left eye. The foreign body entered at the inner and lower corneoscleral junction, tore the iris, passed through the lens, and disappeared within the vitreous chamber. Very shortly after the accident the patient was examined by Dr. Alexander Craig, of Columbia, who very properly and skilfully removed the iris, which was prolapsed into the wound, and carefully sterilized and bandaged the eye. He has sent the patient here in the hope that we may be able to secure the piece of steel with the electromagnet and thus save the eye—at least, save the man from an enucleation, which otherwise would be required.

The radiographs which I exhibit were made by Dr. William Sweet and indicate that there is a large piece of steel embedded in the lower and inner portion of the eye just posterior to the ciliary body. Without these photographs it would be impossible to tell exactly where the steel is, because the lens has already become entirely opaque, and ophthalmoscopic examination is impossible. In the last few years in this clinic we have many times seen how accurate this method of localization as developed by Dr. Sweet has become; in fact, I know of no case in which there has been the slightest flaw, and in all instances where it was possible to dislodge the steel the magnet has secured it, although in some cases the destruction of tissue has been so great that later enucleation of the eye became necessary. I therefore feel very confident that by following Dr. Sweet's localizing diagrams we will secure this foreign body.

Accordingly I make a vertical incision along the inner edge of the inferior rectus muscle, beginning about six millimeters from the corneoscleral edge. The length of the incision is a little less than a centimeter. I now introduce the broad, flat extension point of a Hirschberg magnet, passing it backward and a little toward the inner side. If you were near enough you could hear the click of the metal as it adheres to the magnet. In order that it shall not be swept off by the edges of the wound, these are now separated by Dr. Veasey with two small retractors, and as I withdraw the magnet you see the steel clinging to it. After thoroughly irrigating the eye with saline solution I insert two scleral stitches and three superficial conjunctival stitches. The eye will be bandaged, iced compresses kept upon it for at least forty-eight hours, and small doses of calomel will be administered, which have a tendency, I think, to allay inflammatory action. This operation relieves us of the necessity of enucleating the eye, and neutralizes the danger of sympathetic ophthalmitis. If no unfavorable reaction occurs the patient will get well with an eye which has at least light perception, and it is possible that a subsequent extraction of the cataractous lens may restore even greater vision.*

*The patient made an uninterrupted recovery and returned home on the eighth day, passing again under the care of Dr. Craig. He was seen on the 31st of May. The eyeball was slightly flushed, was subject to occasional attacks of epiphora, the lens was entirely cataractous, and there was a slight prolapse of the iris in the old corneoscleral wound, but in all other respects the

CASE III.—*Panophthalmitis; Evisceration of the Eyeball.*—This patient, a boy aged ten years, three days ago while playing in the street was struck in the left eye by a piece of wire, which entered directly in the center of the cornea and penetrated the crystalline lens, very probably passing through it into the vitreous. Although he came immediately under excellent care, within twenty-four hours there was extensive inflammation of the entire eyeball. Doubtless the wire was in a highly septic condition, and now there is wide-spread staphylococcus infection. For reasons which I will detail presently I will perform the operation of evisceration.

The speculum is introduced and the conjunctiva loosened around the cornea. Next the anterior chamber is transfixed with a knife on a level with the horizontal meridian and the upper portion of the cornea separated, the flap seized with forceps, and the remainder of the cornea cut away at the corneoscleral margin. With this small scoop the contents of the globe are thoroughly evacuated, care being taken that nothing is left behind, especially none of the choroidal tissue. The cavity of the globe is thoroughly wiped with sterilized gauze and repeatedly packed until all bleeding is stopped. The edges of the sclera and the conjunctiva are united separately, but both with silk sutures. Sometimes, instead of interrupted sutures, a suture similar to the string which draws shut a tobacco pouch is employed. Personally I prefer the method which you have seen me just employ.

You will notice that not only the surface of the iris and the lens but fully one-half of the vitreous is one mass of pus. Therefore, no possible treatment could have saved this eye, and its pathological conditions give the indications for the operation. Had the eye not already been infected we might have concluded the evisceration by the insertion of an artificial vitreous in the form of a small glass ball, such as I exhibit to you. This is the operation sometimes known as Mules's operation, and one which leaves an excellent stump, but which is contraindicated, at least in my judgment, when the conditions which have rendered the operation necessary involve purulent processes.

Among the indications for evisceration panophthalmitis is given the greatest prominence, largely owing to the teachings of Alfred Graefe that meningitis was less likely to follow than after an ordinary enucleation. It is to be remembered, however, that meningitis itself is an infrequent complication after complete removal of the eyeball. This subject has recently interested me, and I have references to something over fifty fatal cases after enucleation, thirty-three of which certainly, and probably more, followed one stage or another of suppurative disease of the globe. If meningitis ever follows the operation of evisceration, it must be exceedingly rare. I have notes of 476 cases without an example of this character, nor does one occur in nearly 800 operations reported by a foreign observer named Wolkomitch. One of the few cases on record, the only one the details of which I am acquainted with, was an instance of purulent cerebrospinal meningitis from pneumococcus infection, and therefore it is likely that the suppurative disease for which the evisceration was performed had the same etiology as the meningitis.

Meningitis after enucleation of a non-suppurative globe is exceedingly rare. In a recent collection made in England of 10,734 cases of enucleation from various sources, not a single instance occurred. In a table compiled some years ago in this country by Dr. J. A. Andrews, this complication is recorded after enucleation for foreign body in the eyeball, detachment of the retina without choroidal changes, phthisis bulbi without suppuration in its center, and painful total staphyloma of the cornea with no note of pus in the globe. Other instances have been published elsewhere, but in two of these, at least, the patients escaped from hospital control almost immediately after enucleation, and therefore they ought not to be counted.

On the other hand, enucleation during panophthalmitis may be performed almost with impunity. Thus, in 2873 enucleations performed in three of the large eye clinics of this country, the pathological condition demanding enucleation was suppuration of the globe in 278 of the cases, and only one resulted fatally. How far advanced the suppurative disease was in each of these 278 cases it is impossible to ascertain. Doubtless it was just beginning in some of them, but probably active in about two-thirds.

Sometimes meningitis may be started by a primary ophthalmitis without excision of the eye.

Finally, in a certain number of instances meningitis may have been present before the

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function of the eye appeared normal, the light projection being good, with the single exception of a slight imperfection in the nasal field. There seems little doubt that the cataractous lens can later be extracted.

operation was performed, and may not have manifested itself by symptoms sufficiently accurate to permit a diagnosis, or the symptoms may have been masked by those produced by the suppurating globe.

Now it is evident that suppuration within the globe should not be permitted to continue without interference, and hence the surgeon must decide between enucleation or evisceration. Although the risk of meningitis, or of a fatal termination from any cause after enucleation for any pathological process within the globe, is exceedingly rare, being about 1 in 1600 operations, it must be remembered that in the majority of instances the lethal issue has occurred when the condition of the eyeball at the time of enucleation was one of partial or complete suppuration. While it is not always possible to connect the meningitis directly with the operation, in some instances this connection has been definitely established. A number of surgeons, while in favor of enucleation in panophthalmitis under certain circumstances, believe, as Pooley does, that the operation is contraindicated, and presumably evisceration indicated, where the purulent process has reached too great a height, lids and conjunctiva participating in the swelling, where not only the eye is filled with pus, but there is purulent inflammation of the orbital tissues, and where the purulent infiltration has begun posteriorly, as in some varieties of septic iridochoroiditis.

This conclusion seems to me to be a good one, and personally I never hesitate to enucleate an eyeball in which there is suppuration if the surrounding orbital tissues are not involved in the process. In the present instance the infection was so rapid, and the pain has been so great, that I was not sure that the suppurative process was entirely confined within the scleral walls, and therefore performed the operation which you have just seen. There is another advantage, namely, that the stump after evisceration, primarily at least, is better than that after enucleation—that is to say, the cosmetic result after the insertion of the artificial eye is better. It is doubtful, however, whether this primary gain in the mobility of the prosthesis remains permanently.

VACCINATION.

By R. K. Hutchings, M.D.,
Colorado Springs, Colorado.

It is taken for granted in this paper that the immortal Jenner was right. We have so improved in the method of inoculation that very likely he would scarcely recognize his own handiwork, but the underlying principle, as enunciated by him, has stood the test of time, and we can thank him for having had the courage of his convictions in introducing to the world one of the greatest blessings allotted to mankind.

The criterion of all remedies and principles, in general, is that gained by time and tested by numbers. Vaccination has stood this test in every particular. One fault we medical men have is in not insisting on revaccinations. We vaccinate a family once; perhaps it is ten, fifteen, or twenty years before these same people are vaccinated again. In the meantime some of them have contracted smallpox from the fact that the true limit of the first inoculation has expired. In such a case the "antivaccinationist" gets in his deadly work and proclaims abroad the idea that vaccination is a farce, because here is a case with a scar and also a victim of the dread disease. More than likely one more vaccination would have saved such a case from the disease.

If we could only establish a universal law that every person should be vaccinated every five years, scars or no scars, *nolens volens*, it is safe to say we would in a very few years stamp out completely the scourge of smallpox. Cities in general would save money by bearing the expense of vaccinating all their inhabitants every five years—as the expense of one case of smallpox is more than hundreds of vaccinations.

The immunity obtained by vaccination lasts, as we all know, a variable time. In some it is only a few months, in others a lifetime. Generally speaking this immunity is something less than ten years in the majority of cases, as is proved by the fact that we have an epidemic of smallpox approximately every ten years. During a smallpox scare every one is vaccinated, the disease is stamped out, and then no one is again vaccinated until another scare is abroad in the land. This interval of time is about ten years. Why not prevent the disease altogether by vaccinating everybody every five years and making sure of it? The physicians of the country have a moral duty to perform in educating their clients in these matters. Many of the laity think that to-day we practice the old "arm-to-arm" method of inoculation. The antivaccination societies promulgate this doctrine. These societies have become so strong that the government of England has been influenced to pass a law repealing the compul-

sory vaccination act and allowing any one who is "conscientiously opposed to vaccination" to file a certificate to that effect and remain unvaccinated. It is safe to prophesy that it is only a question of a short time when England will be visited with such an epidemic of smallpox that she will think the country has lapsed into the dark ages.

Much prejudice against vaccination is brought about by the method employed. The best results and the neatest and most typical scars are obtained by making *small* scarifications. The scarified place should be but little over one-sixteenth of an inch square. It should never be greater than one-eighth inch square. The scar is always larger than the original scarification, varying from one-quarter inch to many times greater, depending upon the manner in which it is done and the patient operated upon. Some cases show ugly scars, slow to heal and aggravating in every particular, due to a low condition of vitality of their tissues. These cases are the exception, and are not to be considered in the general results obtained.

A great mistake is made if the patient is allowed to dress the vaccination with vaselin or any ointment. The best results are obtained by keeping the sore perfectly dry from start to finish. The simplest and quickest method of protecting the scarified surface is to put a small pledget of absorbent cotton upon the place after the lymph is dry, and over this an adhesive strap. As soon as the arm begins to get sore the cotton is removed and a fresh piece strapped on. This insures perfect protection. It is needless to say that surgical cleanliness is to be practiced at all times. Antiseptics, if used to cleanse the arm, must be carefully removed before applying the lymph, so as not to kill the vital principles of the virus. This small item is often forgotten, and the consequence is no scar is obtained.

Occasionally a lump forms at the site of inoculation; this lump is spongy, about the size of a pea, and red, covered at times by a small scab. It generally remains a week or ten days, perhaps longer, and then dries up, leaving no scar. Many pronounce such cases successful. This is not true, and the patient is not immune. Any vaccination to be successful must leave a scar. In many instances a second vaccination of such cases obtains a successful result, proving the first time a failure. I have never been able to ascertain the reason of this lump formation, and have never found any mention of it in any records consulted.

Two places of inoculation at the same time are better than one, as will be shown below. These two scarifications, made as stated above, and about two inches apart, do not make as sore an arm as one large scarification. It has been proved that two or more scars give greater immunity, for the regulation time, than one. The immunity obtained from two scars is greater for the time being, but does not last any longer than if only one scar was present. I have seen one arm with six scars, all made at the same time, the physician being under the impression that he was giving the child immunity for life. This same child, aged about nine years, was vaccinated in two places, and both places gave typical scars.

Smallpox itself does not give immunity, as is proved by many cases on record of people having it twice and even three times. Vaccination will often "take" in a person who has had smallpox.

If by some mischance, either individual or operative, a foul sore is the result of a vaccination, the only thing to do is to treat it as any other wound is treated. Cleanse it thoroughly and frequently with antiseptics and then use some of the antiseptic powders, aristol preferred. After a vaccination has once degenerated into a regular ulcer, it is to be treated as such and not as a vaccination any more.

It is only a question of a short time when the quill or ivory point will be a relic of the past. The most scientific method is the use of the hermetically sealed capillary tubes. In comparing two hundred cases of point vaccination and two hundred cases of tube vaccination, I find the best results accrued from the tubes. The local reaction was not so great, the healing of the sores was quicker, and the scars were small and typical. Among one thousand cases, in round numbers, both of point and tube vaccinations, operated upon the past year, there were no serious results. I have used all the different vaccine viruses manufactured, and adopted Parke, Davis & Co.'s as the standard, because of its reliability and the ease with which it can be used.

If every country to-day would but follow the example set by Germany, our civilized peoples would very soon never have to pay any more money for pest-houses or smallpox nurses. The following words from an article by Dr. Bizzozero, of Rome, give the whole thing in a nutshell: "Germany stands alone in fulfilling in a great measure the demands of hygiene, having, in consequence of the

calamitous smallpox epidemic of 1870–71, enacted the law of 1874, which makes vaccination obligatory in the first year of life, and revaccination also obligatory at the tenth year. What was the result? With a population of 50,000,000, having in 1871 lost 143,000 lives by smallpox, she found by her law of 1874 the mortality diminished so rapidly that to-day the disease numbers only 116 victims a year. These cases, moreover, occur almost exclusively in towns on her frontier. If it were true that a good vaccination does not protect from smallpox, we ought to find in smallpox epidemics that the disease diffuses itself in the well vaccinated no less than in the non-vaccinated countries. But it is not so. In 1870–71, during the Franco-German war, the two peoples interpenetrated each other, the German having its civil population vaccinated optionally, but its army completely revaccinated, while the French (population and army alike) were vaccinated perfunctorily. Both were attacked by smallpox; but the French army numbered 23,000 deaths by it, while the German army only had 278; and in the same tent, breathing the same air, the French wounded were heavily visited by the disease, while the German wounded, having been revaccinated, had not a single case."

It behooves the medical profession as a body to take concerted action and make a fight to a finish upon ignorance and prejudice, as is exemplified by the "antivaccination societies."

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*ON THE PHYSIOLOGICAL ACTION OF SENECIO JACOBÆA.**

By J. L. Bunch, D.Sc., M.D., M.R.C.P. Lond.

The experiments were performed on dogs, after the administration of an anesthetic which was varied in the different experiments. The drug was as rule injected intravenously, preparations made from the entire plant being employed. From the underground parts of many species of Senecio two alkaloids have been obtained by A. Grandval and H. Lajoux,† but in extremely small quantities, the amount ranging from 0.006 to 0.42 gramme per 1000 grammes.

In these experiments the effect of the drug upon the heart was recorded by means of Professor Schäfer's heart-levers, connected with the auricle and ventricle respectively, tracings being taken on smoked paper, and the carotid blood-pressure was recorded simultaneously. When small quantities of an alcoholic extract of the entire plant were injected intravenously, they produced a slight rise of general blood-pressure, accompanied by some diminution in the magnitude of both auricular and ventricular contractions, the diminution being, however, somewhat more marked in the case of the auricle — effects which are not produced by alcohol alone of the same strength.

After several injections, or after one large dose, further injections of the extract caused a fall of general blood-pressure, with slowing of the contractions of the heart, and consequent increase in the excursions of the kymograph. If a considerable interval was then allowed to elapse before any more of the drug was injected, further small injections caused some rise of general blood-pressure. It appears, therefore, that there are contained in the entire plant two substances with distinct physiological actions, but how far these substances correspond with the alkaloids previously mentioned it is impossible to say.

Intravenous injection of a watery extract of the residue obtained by evaporating down the alcoholic solution, taking up in water and filtering, caused a marked fall of blood-pressure, with slowing both of the auricular and ventricular contractions, and sometimes irregularity of the heart-beats. This fall of blood-pressure was followed by a slight rise due to constriction of peripheral vessels, but cardiac inhibition was still present to a certain extent. Section of the vago-sympathetic did not abolish this effect, but if the nerve endings in the heart were paralyzed by the previous administration of small doses of atropine, cardiac inhibition was no longer brought about by the drug; and thus it seems that it is on the cardiac nerve endings, and not directly on the muscular tissue of the heart, that the inhibitory effect of the drug acts. Small doses of the drug cause constriction of the intestinal vessels, while large doses (0.8 to 1.0 gramme for a dog of about seven kilos) cause intestinal vasodilatation and at the same time inhibition of the muscular contractions of the intestine.

Conclusions.—1. Injection of an alcoholic extract of the entire plant of *Senecio Jacobæa* into the circulation of a dog in small doses causes a rise of general blood-pressure, with constriction of the vessels of the intestinal

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*Abstract of a paper read before the Therapeutical Committee of the British Medical Association.

†*Pharmaceutical Journal*, vol. i, 1895, p. 1195; vol. ii, 1895, p. 535; also *Compt. Rend.*, cxx, p. 1120.

area. This effect is accompanied by a diminution in the magnitude of the contractions both of the auricle and of the ventricle. 2. Large doses of the drug cause a fall of general blood-pressure, with dilatation of the intestinal vessels, and inhibition of the intestinal muscular movements. 3. After several small doses, or after one large dose of the alcoholic extract, further injections produce a fall of blood-pressure, with slowing of the heart, and this effect is repeated unless a considerable time is allowed to elapse before any further injection of the drug, which then again causes some rise of general blood-pressure. 4. The entire plant, therefore, contains two substances with distinct physiological actions, but up to the present it has not been possible to isolate these substances. 5. Watery extracts of the residue obtained by evaporating the alcoholic solution produce a fall of blood-pressure and cardiac inhibition, due to the action of the drug on the nerve terminations in the heart, and not to direct action on the muscular fibers of that organ. 6. The substance which causes a rise of blood-pressure is not contained in such watery extracts, or, if present, only in small quantities.

THE TREATMENT OF NOMA.

By G. M. West, M.D.,
Eufaula, I. T.

Noma is essentially a disease of childhood, and is characterized by a rapid destruction of tissues. It usually attacks the left upper cheek, and is more prevalent among girls than boys. It never occurs prior to dentition, and is rare after seven years, but may occur as late as twelve, the oldest child coming under my charge being nine years of age. An indurated glistening cheek with a rapidly destructive ulcer within, spreading in all directions, with indescribable fetor and excessive dribbling of saliva, in a debilitated child from two to twelve years of age, is sufficient evidence to confirm the diagnosis of noma. The predisposing causes of noma are numerous, comprising almost all known diseases and conditions of hygiene which tend to place the vital resistance of the tissues below par. The English authors give measles the first place as a causative factor, while the American and German authors, harmonizing my own experience, give the head mark to the careless administration of mercury. As to the direct cause, we are as much in the dark to-day as we were a hundred years ago. No particular germ has ever been isolated, yet from the rapid destruction of tissue, induration, fever, and prostration, it is evident that a great struggle is being waged between the living tissue and some germ. Whether it is a modification of some known germ or a special coccus, I am not prepared to say.

The literature of the subject does not extend beyond the seventeenth century. It either did not exist prior to this time, was not recognized, or was shamefully neglected. The mortality was formerly very high, and is even now about seventy-five per cent.

There are three features in the treatment of noma, viz., surgical, medical, and mechanical. The process must be checked promptly, and to do this every particle of the indurated friable tissue must be extirpated, for anything short of this amounts to useless interference. For this purpose I prefer the sharp spoon, for the reason that it is of the greatest importance to save all the flesh possible, and the friable tissue can be easily handled with the curette; besides, when we arrive at free hemorrhage we have unmistakable evidence that we have passed the region of septic thrombi, a hasty cauterization promptly checks all bleeding, and then we can proceed with the curettement until every particle of infected tissue has been removed and the base cauterized. Perhaps the actual cautery is preferable, but when not available I have used fuming nitric acid, which has served a good purpose. I believe too much dependence has been placed upon the cautery, and not enough stress laid upon the curette.

As the condition is prone to recur at intervals until the patient is restored to health, it may become necessary to repeat the curettement, in which case the life of the patient depends entirely on prompt action.

Now that we have a patient suffering from a surgical operation, inanition, prostration, and septicemia, we have arrived at a point where one hour of procrastination may mean a life, as the rapid extension may invade tissue that cannot be safely extirpated, besides increasing the septic element, which may now become a dangerous factor. I had such a case recently and took pleasure in showing it to four physicians, all of whom pronounced the case hopeless; but after four curettements and many other vexations the patient was discharged sound and well. The uncontrollable nature of the disease has a demoralizing and disheartening tendency on the

physician, which should be opposed as much as possible, for when the patient becomes dead in the physician's mind, his half-hearted efforts will come to naught.

Indications for medical treatment are active stimulants and reconstructives. I usually combine camphor, strychnine, and quinine to meet the first two, and some such drug as calcium sulphide or iodide of potassium, and in extreme cases saline infusions.

The mechanical treatment consists in keeping the buccal cavity on the affected side, together with the excavation, well packed with a deodorizing and antiseptic dressing, with the head so inclined that the saliva may dribble out of the mouth, the patient being constantly reminded to breathe through the nostrils, or, if very young, she should be compelled to do so, in order that the fatal complication of septic pneumonia may be averted.

I once used potassium permanganate as a cleansing agent, but it so blackens the surface that one cannot detect a suspicious locality until it is far advanced; so I was induced to devise other means, and hit upon hydrogen peroxide in its stead, tamponing afterwards with a sterile gauze saturated with a solution of oil of cassia two to four minims, oil of gaultheria five minims, and half a drachm of hydrastis. This combination meets all indications abundantly. The dressing should be changed frequently at first, and by the attendant himself, keeping a constant lookout for relapses. When it is evident that the process has been checked, the dressing may be applied four times a day, and later less often, but it should never remain until it produces irritation of itself. If there are uneven teeth, or teeth being pressed upon by tissue producing excoriation, they should be at once removed, for an excoriation may mean a relapse, and a relapse may mean a fatal issue.

THE USE OF MORPHINE IN SURGICAL PRACTICE.

By Edward Martin, M.D.,
Professor of Clinical Surgery, University of Pennsylvania.

Partly because of a distrust of all drugs, partly because of the teachings of the laparotomists, morphine is generally regarded by the surgeon as a medicament to be administered only under most exceptional circumstances. Because of its at one time indiscriminate and too free use the immediate ill effects of this drug have been put forward so prominently that its employment is regarded as a choice of evils at best, as utterly unjustifiable under ordinary circumstances. The chief objections urged against it are: (1) It masks symptoms; (2) it checks secretions and elimination; (3) it causes nausea, vomiting, and constipation; (4) it depresses the vital centers; (5) the morphine habit is easily formed and is difficult to break.

The value of the drug lies in the fact that it quite certainly relieves pain, and in many patients makes anesthetization much easier.

Were the evil effects above enumerated constantly or even commonly appreciable, its use should rightly be restricted to cases of absolute need. As a matter of observation for ten years in three hospital services, when morphine has been administered because of the indications shortly to be given, its effect has been beneficial without qualification, and often, though not always, in people who ordinarily exhibit an idiosyncrasy against the drug, most commonly manifested by nausea and vomiting. When the indications for its use were present I have not hesitated to use it after all operations, including those on the kidneys or intestines.

The drug should always be given hypodermically, since thus it exerts its minimum effect on the stomach and bowels. The indications for its use are:

1. Shock with pain and restlessness.

2. Before operation, uncontrollable nervousness, a history of previous difficult etherization, or alcoholism. Fifteen minutes before administering the anesthetic from an eighth to a quarter of a grain of morphine may be given hypodermically.

3. After operation, pain so harassing as to cause restlessness.

The much greater ease with which a drunkard or a wildly nervous patient is etherized after having taken morphine is so generally known that the rarity with which this drug is used under such circumstances shows how profoundly the profession has been prejudiced against it. Not only is the anesthetic taken in less quantity and more quickly, but the subsequent struggling and vomiting are also modified; nor during the twenty-four hours succeeding the hypodermic can any of the injurious effects of morphine be noted.

In the tossing, wearing restlessness which often characterizes severe shock and hemorrhage, whether pain be present or not, the immediate injection of a moderate dose of morphine while preparation is made for hypo-

dermoclysis or intravenous injection is followed not only by rest but by an improvement in all the threatening symptoms. This injection should be repeated at fifteen-minute intervals until the desired effect—rest, and relief of pain when this is present—is produced. Under such circumstances both body and mind are splinted, the patient's apprehension or terror is relieved, he is saved the exhaustion incident to his constant motion, his heart action becomes more quiet and regular, and he is put in the best possible condition for the favorable action of restorative measures. Because of this quieting action on the heart morphine is, I believe, our best internal hemostatic.

Following many operations when the patient recovers from ether, he suffers more or less pain. When this is moderate in degree, gradually eases from hour to hour, and is well borne, it does little harm; when it is so intense as to produce restlessness, the patient constantly turning or wishing to turn, and incessantly moving the arms and legs, it should be relieved by morphine, and this quite regardless of the region or organs operated on. In more than a hundred cases I have given it for the relief of pain and restlessness following intraperitoneal operations, and in not a single instance were its effects other than beneficial. It has not rendered the subsequent opening of the bowels more difficult; it has quieted violent peristalsis, which works only for ill; it has slowed, steadied, and strengthened the heart; and has given rest to the body and mind.

With all due respect to the admirable work done by the gynecologists, I believe they have carried beyond the bounds of reason their crusade against morphine. When preceding operation the gut has been emptied by appropriate diet, by laxatives, and enemata, and has been treated by the mouth administration of intestinal antiseptics, and when the operation has been neat, cleanly, and completed without rough handling or infection, an immediate subsequent active purgation would seem as little called for as would the violent kneading of the inguinal region after an operation for the radical cure of hernia. Under other circumstances I freely admit the value of the saline treatment; it is rather against its indiscriminate use that I would protest. Thus I have seen an unfortunate woman, whose ureter had been accidentally ligated by her surgeon, take almost with her last breath her eighteenth futile dose of salts for the relief of an anguish greater than that caused by the cunningest device of the most fiendish inquisitor. In this case absolute dependence upon a measure often successful was quite as misleading to the surgeon as would have been a masking of the symptoms with morphine. And as opposed to the argument against the use of the drug—*i.e.*, the masking of symptoms—it may be said that pain is perhaps the least important and reliable single symptom of serious intraperitoneal trouble. Abdominal rigidity, true obstructive symptoms, pulse, respiration, and temperature, are but little masked by morphine.

Following nephrectomies and nephrorrhaphies the pain is likely to be particularly severe, and under such circumstances I have never hesitated to give morphine, though it is commonly believed that this drug markedly affects the kidney secretion.

The general indications as to the employment of morphine in surgery may be summarized as follows:

1. Morphine should be given hypodermically and in doses sufficient to accomplish the purpose for which it is given.

2. When surgical shock is attended by such severe pain as to cause uncontrollable restlessness, morphine should be given in doses adequate to relieve it. The same treatment is indicated for shock-restlessness without pain (usually due to hemorrhage), the appropriate general treatment for shock being also carried out.

3. Morphine is the best internal hemostatic in the treatment of hemorrhage. When the hemorrhage is complicated by restlessness morphine is absolutely indicated because of its quieting effect upon both mind and body.

4. When drunkards, or exceptionally neurotic patients, are to be anesthetized a preliminary hypodermic injection of morphine renders such anesthetization quicker, easier, and safer, and favorably affects the stage of recovery. Obstinate and exhausting vomiting after ether is sometimes relieved by morphine.

5. If in the first twenty-four hours after operation pain becomes so severe as to cause uncontrollable restlessness, this pain should be relieved by morphine. To this rule there are practically no exceptions; it applies to all operations regardless of the operative area.

6. When used in accordance with these indications the beneficial effects of morphine so overshadow its injurious effects that the latter are not demonstrable. To this rule there may be a very few exceptions.

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Leading Articles.

THE STRENGTH AND RELIABILITY OF MEDICINAL SUBSTANCES.

It may not be out of place for us to call attention once more to the very great importance of the physician seeing to it that all the drugs which he employs are as efficiently active from a medicinal standpoint as they possibly can be. Of course, the chief difficulty in many instances is that they are not strong enough, but in a few instances the possibility exists that they may be too strong. It is true that the Pharmacopœial Revision Committee of 1890 introduced into the United States Pharmacopœia a number of standardizing tests designed to guarantee the purity and medicinal activity of a number of the pharmaceutical products which the Pharmacopœia ordered. On the other hand, it is also a fact that a certain number of standardization methods then known were not introduced by the committee at that time, and it is also a fact that with the advances which have been made in pharmacy and chemistry additional tests have now become practical and practicable, so that the new Pharmacopœia should, we think, contain additional measures for the purpose of thoroughly determining the activity of the various medicaments which it commends by publishing them in its lists of official remedies.

Our attention has once more been called to this important subject by a valuable series of papers published by Prof. John M. Francis in the *Bulletin of Pharmacy* during February, March, and April of the current year. In the course of these papers, in which Professor Francis gives us the results of a very large number of tests which he has made of many pharmacopœial preparations, he informs us that in a certain number of instances the tests recommended by the Pharmacopœia are inadequate, impractical, or cannot be emp'oyed satisfactorily for several other reasons.

At this time we presume that there are few physicians who are inclined to doubt the necessity for having standardized products, and therefore it is not necessary for us to enter into any argument in favor of the standardized product in distinction from that which is not standardized. Dr. Francis suggests that in the case of guarana it shall contain four per cent of caffeine, as he has found out by ample experience that this is a bare average, and that it would be perfectly proper and right to demand of all the guarana which is employed medicinally that it shall contain this quantity of active principle, it being known, of course, that the chief if not the sole activity of guarana depends upon the caffeine which is in it. This is entirely possible in view of the fact that the assay processes for the determination of caffeine have been so thoroughly proved and developed that there is little excuse in his opinion for failing to adopt standardization for all galenical preparations in which caffeine is the principal therapeutic constituent. He then goes on to point out that in the case of resin of podophyllum the statement of the Pharmacopœia to the effect that eighty per cent of this resin is soluble in boiling water is erroneous, unless the resin be treated continuously with a large amount of boiling water. He is inclined to doubt the wisdom of directing that this resin should be prepared by extracting mandrake root with 95-per-cent alcohol, it having been repeatedly found that 65- or 67-per-cent alcohol is the best solvent for the extraction of this drug.

It is not necessary to go on naming instance after instance in which changes of this character may be made with advantage. The average physician is quite content, as a rule, to rely upon his wholesale manufacturing

pharmacist or upon his local pharmacist who dispenses his drugs, but it is necessary that this physician shall express his views to the druggist who dispenses remedies under his direction, and we believe that the medical profession should be a unit in seeing to it that the profession of pharmacy provides us with remedies which are absolutely reliable. As we have said before in these columns, no surgeon thinks of performing a delicate operation without first seeing to it that the instruments which he employs are not only carefully sharpened and sterilized, but also that they are made of sufficiently good steel to be entirely reliable. The physician in writing a prescription by the bedside has clear ideas of exactly what he wishes to accomplish, and how often are these ideas not carried out by reason of the fact that the drug which is dispensed is inferior in quality. There is just as much variation in the therapeutic and commercial value of various samples of every drug as there is variation in the commercial value of various samples of wool, cotton, or other materials, and unless we see to it that the very best are employed, our patients suffer in health and we suffer in reputation.

In concluding his paper Professor Francis adds a few words which, while they do not deal directly with the business of the physician, are nevertheless of considerable interest to us. He says: "Another point is worthy of consideration, and that is whether or not it would be advisable to have one standard for those drugs which are imported directly for the pharmacist's use in the preparation of his extracts and for dispensing, and a second standard for an inferior quality of the same drug which is imported for manufacturing purposes. This plan would apply particularly to such drugs as cubeb, coca leaves, asafetida, etc. It is manifest that there is always a large quantity produced of second-class or inferior quality of any important drug. This is possessed of commercial value, and consequently will not be discarded because it does not meet pharmacopœial tests. If it is debarred from our country in order to protect the quality of the drug used by the retail pharmacist in the manufacture of galenical preparations, it necessarily follows that it will seek a market in foreign countries where these specifications do not hold. The operation of such a law would place the manufacturers of pilocarpine salts, cocaine, cinchona alkaloids, oil and oleoresin of cubeb, oleoresin of black pepper, purified asafetida, and various other substances which form the basis of prosperous manufacture, at such a tremendous disadvantage that they could not compete with foreign rivals. We have a very pertinent example of the operation of such a ruling in the manufacture of caffeine. The United States custom house at present excludes all tea which contains less than a certain percentage of caffeine. This serves to protect the quality of tea consumed by our citizens, but at the same time it operates as a hardship to those manufacturing houses who would otherwise use enormous quantities of tea-dust, sweepings, and inferior tea-leaves in the manufacture of caffeine. The same thing would hold true in the manufacture of cocaine, provided that nothing except the finest quality of 'huanuco' leaves were allowed to enter our ports. The manufacturer of cocaine in the United States would find himself at a disadvantage in being forced to pay the price commanded by this quality of drug, and he could not compete successfully with the German manufacturer who utilizes the inferior and less costly drug obtained from other varieties of plant."

DANGER IN THE LOCAL EMPLOYMENT OF CARBOLIC ACID AS A SURGICAL DRESSING.

From time to time during the past ten years we have called attention to the fact that carbolic acid is a drug which is capable of producing very serious conditions when it is taken internally. We have called attention to the fact that suicide or accidental death very frequently follows its employment. And now it is our duty to point out that when it is applied, even in weak solution, it is capable, at least in the extremities, of producing gangrene and local death of the parts to which it is applied. It is important to bear in mind that this untoward influence does not only follow its employment in strong solutions, but in weak solutions as well; while numerous instances are on record in which five-per-cent solutions have produced serious gangrenous change. It has only been recently that the profession has begun to realize that carbolic acid is capable of producing these serious results in the solutions that we have named. Our attention has once more been called to it by a very valuable article contributed to the *American Journal of the Medical Sciences* for July by Dr. Francis B. Harrington, of the Massachusetts General

CARBOLIC GANGRENE.

Appearance of a finger four weeks after the application for twenty-four hours of a dilute solution of carbolic acid. The finger was wrapped in cloths which were saturated with the carbolic solution not stronger than five per cent. Amputation necessary. Inflammatory process at the base of the finger shown by the reddened tissues.

Hospital in Boston. He reports quite a number of cases in which dangerous gangrene has followed the employment of carbolic acid in the manner that we have discussed, and includes with his paper a number of illustrations showing the changes which have been produced in fingers by these applications. He points out in the course of his paper that as the profession have gradually learned to depend less and less upon carbolic acid as a surgical antiseptic, the laity have come to believe it more and more useful, and have not learned its dangers in the manner in which physicians have learned them. It is, therefore, not uncommon for patients to ask druggists for solutions of carbolic acid, and with these solutions they moisten dressings which, in turn, are wrapped about a damaged finger or toe both for their anesthetic, antiseptic, and so-called healing properties. It is a fact, of course, that carbolic acid when applied to the skin of the trunk, or to the leg or arm, rarely produces a local slough, even when in quite strong solution. It is supposed by Harrington that this is due to the fact that the skin of these parts has a fairly good blood supply, and the constringing of the tissues does not result in entirely cutting off the blood supply, as it does in the case of an extremity such as the finger. Whatever may be the reasons that the skin of the trunk or limbs is not usually dangerously affected, the fact remains that the gangrene which we have described does frequently develop in the fingers. Such gangrene not only produces results which are disastrous to the patient himself, but should the physician employ weak solutions of carbolic acid in the way that we have described, and gangrene develop, we fear that with our present knowledge he might be subject to medico-legal difficulties.

We take much pleasure in publishing herewith one of Dr. Harrington's cuts, which illustrates very clearly the points which we desire to emphasize, and we wish to thank Dr. Harrington and the publishers of the *American Journal of the Medical Sciences* for their courtesy in allowing us to use this most instructive and useful illustration.

SERUM DIAGNOSIS OF TUBERCULOSIS.

An interesting summary of some of our knowledge concerning this question is published by D. L. Edsall in the July issue of the *American Journal of the Medical Sciences*. It should be clearly understood that by the serum diagnosis of tuberculosis we are not referring to the employment of tuberculin, but to the employment of antitoxic sera. Edsall concludes as a result of his investigation that we have not as yet advanced far enough to be able to employ the various serums either for the diagnosis or the cure of tubercular lesions, particularly when they are situated in the lung; and as he wisely says, the reaction to tuberculin, while almost absolute as an indication of the existence of tuberculosis, is unfortunately a very uncomfortable method for the patient, and one which the majority of the profession still fear to use. While there is no real evidence that such fears are justified, patients are likely to rebel against the discomfort of a reaction to tuberculin, and it is scarcely probable that this method will ever be very freely used outside of hospitals. It is for this reason that special interest centers in the employment of serum in the diagnosis of tuberculosis. Edsall thinks that whatever the clinical value of this method may prove to be, it deserves to be tested more widely in order that we may reach definite conclusions concerning it. The great difficulty is that it requires a laboratory and a skilled bacteriologist, and that the methods of preparing the serum are as yet so crude that very certain results cannot be attained.

In this connection it is interesting to note the attitude of various members of the profession toward the employment of tuberculin in the diagnosis of suspected tuberculosis of the lungs or other organs. It will be remembered that Otis concluded from 111 cases in which he employed tuberculin as a diagnostic agent that this test gives earlier indications of tuberculosis than the *x*-ray; and that minute doses, such as five to ten milligrammes of Koch's original tuberculin, are harmless. On the other hand, it is not to be forgotten that tuberculosis cases may fail to react with even larger doses than those which we have named, that syphilis sometimes gives a reaction, and that in rare instances non-tuberculous patients react; finally, that the reaction may be delayed from six to twenty-four hours, so that if immediate reaction does not occur, a clean bill of health is not to be given the patient. Head collected 487 cases, of which 54 per cent reacted and 46 per cent failed. In a series of 136 carefully observed cases, 83, or 61 per cent, gave evidence of the presence of tuberculosis; but some of the advanced cases did not react

(five per cent). In apparent health, 1 in 12 reacted, and of 64 thought to be free from tubercle, as many as 18 per cent gave a positive result. Head thinks that the success of a test may be estimated at 92 per cent in pulmonary, 71 per cent in cervical glandular, 88 per cent in acute pleuritic, 100 per cent in chronic pleuritic, and 91 per cent in arthritic tubercle, and 100 per cent in tubercular peritonitis, in tubercular suprarenal disease, and in lupus. It is held by Max Beck that there is no fear of disseminating tubercle by these diagnostic injections, and he claims that in 54 per cent of 2137 injected cases, the diagnosis was made by this means.

On the other hand, we cannot help feeling that it is a mistake to employ tuberculin in the diagnosis of the average case of pulmonary tuberculosis, or, indeed, of tuberculosis affecting other portions of the body. As a rule the history of the case and the physical signs which any skilled physician should be able to elicit are quite sufficient to determine with considerable exactness that the patient has become affected by a tubercular process, and even if he has not, these physical signs show areas of congestion or consolidation, which make a residence at an altitude or in a climate suitable for early pulmonary tuberculosis desirable, not only for the purpose of clearing up the lesions themselves, but of preventing them from becoming areas in which the tubercle bacillus may be rapidly developed, and thereby superimpose a tubercular process upon one which is primarily not malignant in nature. In other words, there can be no doubt that in a certain proportion of cases tuberculin may be justifiably employed after the physician has exhausted every other possible means of arriving at a correct conclusion in regard to the condition of his patient. But in the majority of instances the more old-fashioned, and what may be called equally accurate, methods of diagnosis can be relied upon. There is, we fear, too much of a tendency to resort to laboratory methods of diagnosis to the exclusion of those bedside methods which years of experience have taught us still possess very distinct value.

INJECTIONS OF CACODYLATE OF SODIUM AS A SUBSTITUTE FOR THE INTERNAL USE OF ARSENIC.

Some of our readers may already have become familiar with the suggestion that the cacodylate of sodium should be employed as a substitute for arsenic, and these and others will be interested in learning that Letulle, in *La Presse Médicale* of April 28, 1900, after calling attention to the introduction of this drug by Gautier, states that the injections of it are not painful, and that they produce very little local irritation. They are given for a week or two and then suspended during the following week. The preparation of the solution of cacodylate of sodium is of importance. Gautier recommends the following prescription:

> Cacodylate of sodium, 100 grains;
> Boiling water, 3 1-2 ounces;
> Carbolic acid solution (10-per-cent), 6 drops.

This is to be heated to the point of boiling, filtered through a sterilized filter, and brought up to three ounces by the addition of sufficient boiled water. Fifteen minims of this solution contains a little less than one grain of cacodylate of sodium, and the carbolic acid is added for the purpose of preserving the solution indefinitely.

Before the injection is given the skin should be made absolutely aseptic, and the region to be selected is that of the flank or the hypogastrium, where the tissues are loose. After a short time, in some cases, the dose may be doubled. The results are not always constant. In a considerable number of cases of advanced phthisis with fever and cachexia, relief is not obtained. On the other hand, in certain other cases of pulmonary tuberculosis of the lungs in which are moist râles, the case being complicated by hectic fever, a remarkable influence is produced: the appetite returns, the fever is reduced, the forces of the economy are preserved, and there is a gain in weight. Whether there is any increase in the number of red blood cells Letulle is not as yet prepared to state. He believes that the favorable influence of this line of treatment is continued for a long time. He details three instances in which, under the use of this treatment, very great improvement took place.

It is interesting to note that in one sense this method of the use of cacodylate of sodium as a substitute for arsenic in the treatment of pulmonary tuberculosis is by no means new—that is to say, physicians have recognized for many years that arsenic exercises a very valuable nutritive and stimulating influence upon a patient suffering from this disease. With the active scramble that there has been on the part of the profession to find specific remedies for pulmonary tuberculosis, too many physicians have

been driven away from "old-fashioned remedies" which time and experience have proved to have undoubted value; and arsenic is one of these, possessing, in some instances, even greater usefulness than cod-liver oil, and very rarely any of the disadvantages of this more disagreeable substance, which, of course, is both a remedy and a food. Whether the profession, after faithfully trying the use of cacodylate of sodium in the treatment of the various conditions in which arsenic is considered a specific, conclude that this new method of medication is of permanent value remains to be seen. The French journals at the present time in almost every issue contain articles which are laudatory in their character concerning this method, and we believe that it has sufficient indorsement to make it worthy of trial by our readers.

THE TREATMENT OF INOPERABLE CANCER.

Czerny, finding that there are yearly in Germany forty thousand deaths from cancer, and that seventy-five per cent of these cases are (when seen by the surgeon) inoperable, very justly devotes his serious consideration to the question of alleviating where a cure is impossible.

The use of the sharp spoon, actual cautery, and chloride of zinc, he commends as serviceable in some cases in diminishing pain, bleeding, and sloughing. Indeed, sometimes the employment of irritants will bring about a cure. Formalin in ten- to twenty-per-cent solution applied by means of compresses is especially commended in sloughing, bleeding, and malignant ulcerations. Cancroin is perfectly useless. Locally, antiseptic powders, such as salicylic acid, boric acid, amyloform, and orthoform, he considers valuable.

Czerny notes that the Italians are much less prone to cancer than the people of northern Europe, that in Algeria it is almost exclusively a disease of the Europeans, and that it increases in proportion to the crowding together of men.

It must be said that his *résumé* of palliative treatment is far from satisfactory. The first thought, after having decided that a cancer is incurable, should be directed toward rendering what is left of the patient's life as comfortable as possible. The use of chloride of zinc, either in strong solution or in the form of pencils, or the employment of arsenic paste, is not a step in this direction. Cleansing and soothing applications, antiseptics and deodorants (among these formalin is usually not included because of the intense pain incident to its application), the internal use of sedatives, a trial of the Coley serum in case of sarcoma, and one thorough course of antisyphilitic treatment, constitute the basis for the humane treatment of inoperable cancer.

THE TREATMENT OF FRACTURE OF THE PATELLA.

Von Bergmann's report upon the results obtained from the open method of treating twenty-five fractures of the patella, calls attention to the fact that there is as yet by no means a united view as to the methods by which this very common injury should be treated.

Even when the bone is united by a fibrous band the disability is comparatively slight, the patient generally walking without a limp and retaining sufficient power of extension for ordinary non-laborious vocations. Hence it follows that the more conservative surgeons are often satisfied with this fibrous union, which is attained very satisfactorily by elevating the leg and thigh so that the quadriceps is relaxed, and by applying straps or bandages in such a manner that the broken ends of the bone are brought fairly close together.

Other surgeons, realizing that this method can never give firm bony union, and hesitating to expose their patients to the risk of a larger incision, puncture the joint above and below the patella, and passing a cord or wire around it through these punctures, draw the fragments closely together, after having evacuated the clots which are always present in the knee-joint.

A few surgeons believe that the only proper procedure consists in freely incising, emptying the joint of its blood, and suturing the bone closely together by means of wire or catgut, which is so passed that it does not include the cartilage.

Von Bergmann states that fourteen of his twenty-five patients were able to resume their customary work after this treatment, and that in only one case was the result distinctly disastrous, bony ankylosis resulting. He drained all his cases and fixed both the knee- and hip-joint for three or four weeks.

The treatment of fracture of the patella should depend upon the nature of the injury and the general constitution of the patient.

In comparatively young people, where the fracture is simple and transverse, puncture of the joint above and below, the evacuation of clots, and the securing of the bones by a silver wire, give admirable results. Where the fracture is so comminuted that this method is not applicable, free incision and a careful suture should be practiced. The conservative treatment by splints should have its main application upon the aged, upon those with visceral disease, and upon those who, for other reasons, have no need for bodily activity.

THE STERILIZATION OF THE HANDS BY MEANS OF A WATER-TIGHT ELASTIC STERILE VARNISH.

Although a complete recognition of the fact that it is impossible by chemical or mechanical means to so thoroughly and deeply sterilize the skin of the hands that at the end of a long operation this surface will remain germ-free has led to the general adoption on the part of the surgeon of rubber gloves —first, as a means of protecting the patient, and second, as a protection to the surgeon himself—it is clearly recognized that the loss of tactile sensibility incident to the use of gloves, and the expense entailed by the necessity for a new pair whenever the rubber is broken or torn through, are serious objections to the employment of these protectors. It is because of these objections that an impermeable coating, flexible, sterile, non-irritating, easily removed, and inexpensive, would be particularly serviceable to the surgeon. Such a coating Kossmann (*Centralblatt für Chirurgie*, No. 23, 1900) believes he has discovered in chirol, a preparation rather indefinitely described as a solution of certain hard resins and fatty oils in a mixture of ether and alcohol boiling at a low temperature. The hands are dipped in this solution, the fingers being bent and straightened. They are then held in the air for a few seconds until the coating becomes dry.

Lévai holds, on theoretic grounds, that this varnish is not sufficiently durable, and that the method of its preparation does not insure sterility. He has evolved a preparation which he believes meets all surgical requirements, and which has, moreover, stood the test of daily experience for upwards of a year. He takes two parts by weight of copal, four parts of Venetian turpentine, mixes them together, and gently heats them with constant stirring until the two substances form a homogeneous mass. This mass is allowed to cool, and is then dissolved in one hundred parts of sulphuric ether, to which is added one hundred parts of simple collodion. This solution is somewhat turbid, but becomes clear on the addition of acetone. By means of a thoroughly sterilized brush the hands are coated with this solution, which adheres closely to the skin, and interferes in no way either with motion or the sense of touch. If the solution be colored by malachite green the surgeon can convince himself on very short trial that it forms a complete coating to the skin of the hands, that it neither breaks nor shells off, and that it is not dissolved by either water, sublimate solution, blood, or any of the secretions of the body. On the completion of an operation it can be removed at once by means of pledgets of gauze soaked in two parts of ether and one part of alcohol. The method of the preparation insures the sterility of this varnish, but sublimate may be added to it without interfering with any of its desirable qualities, and without rendering it in the faintest degree irritating. The preparation of this varnish is readily accomplished and is extremely cheap.

It need scarcely be said that before the application of such a varnish the hands must be thoroughly cleansed in the ordinary surgical manner and must be freed from their fatty covering by the use of alcohol or ether. It is also obvious that people afflicted with sweaty hands cannot possibly employ with satisfaction such a varnish for any length of time, as an abundant secretion from the skin will necessarily raise this coating in the form of blebs, which naturally will be easily broken.

Lévai states that this tendency may be controlled by a previous washing with formalin. He expresses it as his conviction that those who have sweaty hands are not suited to become surgeons. It is obvious that if this preparation possesses the virtues which Lévai has found in it, it will prove a most valuable help to the practical surgeon.

Reports on Therapeutic Progress

SELECTIVE ACTION OF ALCOHOL.

The *British Medical Journal* of May 5, 1900, gives the following account of a lecture recently delivered by Mr. VICTOR HORSLEY:

"Mr. Horsley said that it was his duty to

present from the scientific standpoint a plain statement of the present state of knowledge as to the effect produced on the brain by small doses of alcohol. It probably was not generally known that all drugs had a selective action on the organs and tissues of the body —that is to say, they affected by reason of their chemical affinity some organs or parts of organs and spared others, and this was particularly true of alcohol. As Professor Ehrlich had pointed out, it was merely a question of chemical affinity. They must, therefore, first familiarize themselves with the various elements of the nervous system, which investigation had shown to be the commonest point of attack. The speaker proceeded to give a rapid survey of the central nervous system, illustrating the subject by means of lantern slides. In considering the effect of small quantities of alcohol on the central nervous system it was necessary to discuss its effect on ideation—that is, the intellectual or thinking apparatus—next on the voluntary action apparatus, and then on the cerebellar apparatus for the regulation of movement and equilibration. The activity of the highest physical centers of the brain was estimated in various ways. The activity of the brain in executing the decision of a thought arising from the stimulation of a special sense center could be estimated either by measuring the time the brain took to do some small task allotted to it, first in the natural state and secondly when under the influence of alcohol, or by estimating the amount of work done in a given time.

"The time occupied by the nervous system in observing and recording the simplest thing was called 'the reaction time,' and was so appreciable that in all minute and accurate records astronomers had to measure their reaction period, and to account for it. The lecturer then demonstrated by an experiment the method of measuring the reaction time. This plan in all forms and varieties had been very largely employed by Professor Kraepelin, whose investigations had been so thorough and complete that they explained the somewhat contradictory results obtained by Warren and other observers, and had established on a thoroughly scientific basis the direct influence of alcohol on the higher centers of the brain. The effect was that very speedily after taking the dose of alcohol the reaction time was shortened, but this shortening—that is to say, this apparent quickening of the cerebral act—lasted only a few minutes, and then marked slowing set in, and for the rest of the time during which the alcohol acted, varying from two to four hours according to the individual, the cerebral activity was diminished. The diminution was shown by a noteworthy lengthening of the reaction period—in other words, it took longer for a person who had had a small quantity of alcohol to think.

"A further method employed by Kraepelin was to estimate the ability with which the addition of simple numbers was carried out, and also the learning by memory of twelve places of figures; and in all these tests the slowing of intellectual vigor was shown. In regard to the occasional acceleration observed at the commencement in some experiments, Kraepelin made the remarkable personal observation that during this period of acceleration — that is, during the first few minutes after taking a dose of alcohol—he had the subjective sensation that it was much easier to learn the figures, but when he came to examine the records he found that so far from having achieved his intellectual task more easily, it had, as a matter of fact, been accomplished more slowly. This observation was confirmed also by two other investigators in the same laboratory on whom a similar experiment was performed. This was a striking instance of the deceptive effects of alcohol on the higher intellectual centers of the brain. This deception was not, of course, limited to alcohol, for one of the common subjective sensations of small doses of the ordinary anesthetics was that a person had great muscular strength, and had a sensation of making powerful efforts which were in fact not in any way extraordinary.

"In this connection the lecturer exhibited by means of lantern slides a record of an experiment which he had made upon himself with nitrous oxide, to show how easily an elementary intellectual operation could be blotted out. The experiment consisted in writing threes in two rows, the figures alternating in position, and while these were being written at regular intervals the nitrous oxide was quickly respired so as to produce complete unconsciousness for a few seconds, and then during recovery of consciousness an assistant urged him (Mr. Horsley) to resume writing. The slight extra intellectual addition of writing the figures in alternate rows had been blotted out by the very slight and fleeting poisoning of the cortical centers by the laughing-gas, with the consequence that the figures were written in one line. The

effect of a poison like alcohol on the cerebral centers for voluntary action was readily estimated; some voluntary muscular act was selected, and the amount of force evolved by the sensory motor cortex and exhibited by the muscular contraction measured. The simplest experiment of the kind was one described by Kraepelin, in which he measured on himself and a colleague the force with which they could grasp the dynamometer at regular intervals during the hour or more that the experiment lasted. The result of the experiment was to show that though there might be at first a slight increase of the work put out, very soon a constant and marked failure in the work occurred.

"An interesting parallel series of experiments was made by the same observers under the influence of tea, the effect of which was to improve the output of the physical work for a long time, and to avert to a certain degree the fall due to natural fatigue. Kraepelin had pointed out that though the primary accelerating effect of small doses of alcohol was frequently observed in simple reaction experiments, and in the experiments on the volitionary motor centers, it was not found in his complicated, thought-measuring experiments. In these only the hampering influence was shown. It was clear, therefore, that there was something peculiar about this apparent stimulation of the nervous centers by alcohol, and the explanation might be that the first toxic effect of alcohol on nerve centers was the quicker liberation of motor impulses. Numerous investigators — Aikin amongst others—who had studied this point had suggested, and indeed the greatest Continental authority, Professor Bunge, had taught, that the action of the drug was from the very first an inhibitory or paralyzing one. The primary accelerating stage, therefore, when it was observed, might in accordance with these views be considered to be due to the inhibition of the higher centers or the controlling apparatus which was known to exist in relation with motor centers; in fact, to use an ordinary analogy, every one recognized that directly the governor of an engine was prevented from acting the machinery at once tended to race and to work irregularly.

"Aschaffenburg has made a very careful series of observations on the dietetic use of alcohol in connection with skilled volitionary work. It occurred to this investigator to experiment on certain compositors who had offered themselves for the research at his suggestion. They were skilled artisans, three of whom were accustomed to drink small quantities of alcohol, and the fourth occasionally drank to excess. Small intervals of time were taken, and the total number of letters composed was observed under normal circumstances, from which the necessary averages and observations of fatigue effects were obtained. The relative number of letters set up in the second, third, and fourth quarters of an hour after the commencement of the experiment showed that the maximal difference and chief inhibitory effect of the alcohol was most apparent during the second quarter of an hour, and remained obvious until toward the end of the experiment when the effects were passing off. The disadvantageous effect of alcohol on persons performing muscular work was well known, and it had been proved from the records of military expeditions that the best physical results were obtained under total abstinence from alcohol. The evidence, therefore, was overwhelming that alcohol in small amounts had a most deleterious effect on voluntary muscular work.

"The cerebellum was intimately connected with the cerebrum, and it was known that injury to it was necessarily followed by the loss of the regulation and control of movements, which was especially true of the muscles of the lower limbs. The legs were most particularly associated with the cerebellum, and coordination in standing and walking depended on the normal action of the cerebellum. One of the further effects of alcohol taken in slightly larger doses was to destroy this special function of the cerebellum, and to produce a sensation of tremor and weakness in the lower limbs, so that the individual staggered slightly, and standing became a matter of difficulty. Any one who had observed slight alcoholic poisoning and compared it with the disordered equilibrium of a certain degree of disease of the cerebellum, could not fail to note the close similarity of the two conditions, or hesitate to accept the view that alcohol particularly poisoned the cerebellum. According to the recent researches of Dr. Risien Russell the cerebellum played a part also under normal circumstances of damping the tremor accompanying the discharge of energy from a nerve center. Hence in alcoholic poisoning the exaggeration of the natural intermittent discharge of the nerve centers producing tremor might be due in part to the loss of cerebellar-controlling influence, as well as to the affection of

the cortical portions of the cerebrum. In regard to the structural changes produced in nerve corpuscles by small doses of alcohol, it had to be remembered that with existing means of investigation it was not possible to demonstrate such changes. The vital processes of the body were so delicate that it was not possible to show any change in the protoplasm of the nerve corpuscles corresponding to the physiological alterations referred to as produced by small doses of alcohol. It was, therefore, worth while to show the destructive effects produced by the continued use of alcohol.

"The lecturer then demonstrated by means of lantern slides the disappearance under the influence of alcohol of the granular masses in the Purkinje nerve corpuscles, and how the protoplasm of the body of the corpuscle lost its characteristic structure and the nucleus became altered in shape. The toxic influence of chronic alcoholism on the pyramidal cells was also demonstrated in a similar manner, and the effect of alcoholic poisoning on the normal pigmentation in nerve cells was illustrated by a slide representing degenerated nerve cells, from the *Archives of Neurology*, edited by Dr. Mott, and published under the auspices of the London County Council.

"Mr. Horsley concluded his lecture by stating that from a scientific standpoint the contention so often put before them that small doses of alcohol, such as people took at meals, had practically no deleterious effect, could not be maintained. He had only touched on a very small part of the subject, but if they considered the observations of Parkes on physical work, of Ridge on small doses of alcohol on vegetable protoplasm, and of Abbott and others on the influence of alcohol in rendering animals more prone to microbic invasion, they could only come to the one conclusion—that from a scientific standpoint total abstinence must be their course if they were to follow the plain teaching of truth and common sense."

A METHOD OF GIVING CASTOR OIL.

The method WASHBURN gives in the *Journal of the American Medical Association* of May 12, 1900, is as follows: Fill the mouth with milk and hold it there; dip up a tablespoonful of milk and pour into this spoon—already full of milk—about a teaspoonful of oil; whether cod-liver oil or castor-oil, you will see that it displaces milk to the extent of its bulk, as any other liquid would do, but the globules of either of these oils, being different from the globules in milk, do not mix with the latter, and the oil will be in a round ball, not touching the spoon. As you swallow the milk that has been held in the mouth, take the spoonful of milk in the mouth, and at once begin to drink milk from a cup at hand. Washburn has never yet found the person who, if the procedure was carried through in this manner, could tell whether he had taken castor-oil, or cod-liver oil, or taken none at all. There is absolutely no contact with the mouth or throat of any particle of the oil, nor can it be smelled on the spoon. All this implies taking immediately, but not with undue haste.

The oils as well as the milk must be cold, and the colder the better. The quantity can be increased by degrees as the stomach will stand the oil desired, but if a large dose of castor-oil is desired, it can be better given by repeating the procedure than by attempting to swallow too much at one time.

This procedure has given Washburn and so many of his patients, especially parents when administering oils to children, so much comfort that he repeats what he wrote of it over fifteen years ago, hoping others who do not seem to have heard of it in detail may also find relief from the nauseous taste that so many dread.

THE RATIONALE OF THE TREATMENT OF ANEMIA BY IRON AND ARSENIC.

Dr. F. APERTI has published a valuable paper devoted to the above subject in the *Centralblatt für Innere Medicin* of January 6, 1900. From careful observations carried out for several years in the clinic of Professor Riva, it had been found that the use of injections of iron and of arsenic had different results in the primary anemias. Thus it was found that while iron increased the amount of hemoglobin in the red corpuscles, arsenic increased only the number of red corpuscles. The experimental work referred to in the paper was undertaken to determine the conditions of the blood (both as regards corpuscles and hemoglobin) after a small amount of blood had been abstracted, and also when iron was given with the food; and also to ascertain the influence of arsenic and iron upon the regeneration of the blood in animals from whom blood had been repeatedly withdrawn and whose food and nourishment were free from iron. From these experiments it

appeared that two things were necessary for a complete regeneration of the blood—viz., a restitution of the protoplasm of the red corpuscles and a sufficiency of iron for the production of hemoglobin. When no iron was given in the food the iron necessary for the formation of hemoglobin had to be obtained from the liver and from other organs of the body where hemoglobin and iron were deposited. If iron was withheld from the food too long the blood, and finally the body tissues, lost their hemoglobin and the animal died apparently from profound anemia. Dr. Aperti found from careful chemical analysis that when the period of profound anemia and of grave exhaustion had been reached the iron in the liver was greatly reduced, so that the amount in this organ fell as low as that contained in the spleen and muscles, while the amounts in all three organs were considerably below those in the organs of healthy animals. In animals rendered slightly anemic by bleeding or by withdrawing all iron from the food the administration of arsenic caused a very considerable increase in the number of red corpuscles, but none in the amount of hemoglobin. Injections of iron now caused a very striking increase in the hemoglobin, the amount almost doubling itself in seven days, rising in this time from fifty to ninety-five per cent. Repeated experiments gave the results and confirmed the belief that the two substances act differently, and that while the arsenic increases the number of red corpuscles the iron increases the total quantity of hemoglobin. A rational basis is thus afforded for the therapeutic use of these drugs.—*The Lancet*, April 21, 1900.

THE USE OF ADRENAL SUBSTANCE IN THE TREATMENT OF ASTHMA.

COHEN writes in the *Journal of the American Medical Association* of May 12, 1900, that we have in this substance a decided addition to therapeutic resources—quite active when used locally, and hence to be remembered in the prompt treatment of urticaria or edema of the upper air-passages; and less active, but still definitely useful, by internal administration in controlling urticaria or circumscript edema or similar conditions affecting the bronchial mucosa.

It is not a specific for asthma. It is without good influence, perhaps capable of bad influence, on cases that are really spasmodic—that is, due to contraction of the bronchial muscles. But it is of definite use in that perhaps smaller number of cases of asthma in which the paroxysm is but one other manifestation of a congenital fault of structure or of metabolism, affecting the vasomotor system, and thus permitting the cardiovascular balance, and especially the tonicity of the blood-vessels, to be readily overturned by exciting causes that would have but slight, if any, effect on other individuals. In such cases a more or less continuous administration of adrenal substance, in sufficient quantity to maintain the vascular tone, will act as a preventive, enabling the reactive forces of the individual to combat more successfully the toxins of internal and external origin, the emotional, meteorologic, thermal, and climatic influences, and other sources of disturbance that ordinarily provoke the paroxysm.

As to its dosage, the rule is that of Prof. Ellerslie Wallace, for bleeding in puerperal eclampsia—"Enough." There is great difference in cases and in individuals. Beginning with small doses frequently repeated—*e.g.*, one grain every hour or every two hours—or with a moderate dose, say five grains, once or twice daily, we learn the tolerance of the individual, the tractability or intractability of the symptoms, and regulate accordingly. Cohen has given as few as three and as many as ninety grains of the desiccated gland substance in the twenty-four hours. Five or ten grains every second or third hour during waking hours is a fair dose. In some cases, however, the unnecessary animal substance retained in the preparation gives rise to diarrhea with offensive discharges. If we could have the active agent alone our therapy would be much more definite.

What the active agent is, and how much or how little of that active agent is absorbed, Cohen leaves to laboratory students to determine. Clinically, he has watched closely and critically enough to satisfy himself that neither the susceptibility of patients to suggestion nor the activity of the observer's imagination is sufficient in itself to account for the whole of the results.

THE EMPLOYMENT OF THE DOUCHE AFTER LABOR.

HAMMOND tells us in the *Charlotte Medical Journal* for April, 1900, that the systematic employment of the douche is uncalled for, and that the physician should be acquainted with the indications for douching, for upon his knowledge of these and his judgment de-

pend entirely when the douche should be employed.

All instruments, nozzles, and syringe tips should be sterilized prior to their insertion in the vagina or uterus.

The examining hand and fingers should receive especial attention.

Always wash the vagina prior to the introduction of an instrument into the uterus. The instrument should be introduced by sight.

If catheterization is indicated, the catheter should be sterilized each time. A glass one is preferable.

Do not trust any one excepting a trained nurse to give a vaginal douche, as puerperal sepsis is often attributable to the dirty nozzle on the "family syringe" in the hands of an inexperienced person.

THE HOT BATH AS AN AID IN ABDOMINAL DIAGNOSIS.

Dock contributes a paper on this subject to the *Western Medical Review* of May 5, 1900. He does not think it necessary to speak at length about the importance of abdominal examinations in general. The value of inspection, in a good light, and with the patient in proper position, in many local diseases of the abdominal organs, and in certain diseases associated with eruptions or other alterations of the skin, is well known. The importance of palpation is also recognized. But even with the greatest care and skill, with the patient in a good position, the abdominal wall relaxed, the hands applied without any marked pressure from the finger-tips, and the examiner standing or sitting in such a position that he has complete control of his work, in some cases the results are unsatisfactory. This may be due to rigidity of the abdominal wall from disease, or unusual irritation of the muscles without local disease, or sometimes simply to the thickness and healthy resistance of the abdominal wall. In such cases, where the suspicion of abdominal disease is strong, the patient is sometimes anesthetized for the purpose of completely relaxing the tissues. There is a method, however, of accomplishing the same results that is not only safer but actually superior — namely, by immersing the patient in a hot bath. This is no doubt practiced by many, but certainly not to the extent it should be, and it is frequently not mentioned in works treating of abdominal examination. A few years ago Lennof and Berkhan advocated this method in Germany. On the whole references are exceedingly scanty.

The advantages of the hot bath are: In the first place, less risk — although it must rarely happen that serious or dangerous accidents occur from anesthesia given for diagnostic purposes, yet there is a theoretical danger that can never be lost sight of. In the second place, the method is less disagreeable, the slight discomfort from being immersed in very hot water not comparing with that from inhaling the anesthetic. In the third place, there is great advantage in having complete control over the patient's respiration, and in this way calling into play the powerful action of the diaphragm. The only difficulty about the method is that it requires a bath and a sufficient quantity of hot water, and also, in cold weather, requires gradual cooling before the patient can go out-of-doors. In order to use the bath, the tub should be long enough for the patient to lie almost flat. This is not absolutely necessary, for in a short tub we can get along by having the patient draw up the knees. Nor is it necessary to have the patient suspended in a support, although in some cases this may be pleasanter for the patient and easier for the operator. In using the hot bath the patient gets into a tub almost full of water at about 100° F., and the temperature is then rapidly raised by pouring in very hot water until it reaches at least 110° F. In many cases complete relaxation will be obtained in five or ten minutes at this temperature, but in other cases it may be necessary to raise the temperature as high as 120° F. As the water cools rapidly, hot water must be on hand for keeping up the desired temperature in cases of prolonged examination. The amount of relaxation obtained varies much in different cases, but is always sufficient to enable one to feel many things otherwise impossible. As an example the following cases may be cited:

A patient was thought by his physician to have a tumor in the region of the spleen. He had lost weight and could not get his mind off a prominence in the left hypochondriac region. A prominent abdominal specialist made a diagnosis of sarcoma of the kidney. Others supposed there was a tumor of the spleen, and a number of surgeons recommended an operation. Examining the patient in the ordinary manner, Dock found a slight prominence of the lower costal cartilages on the left side. The spleen was not enlarged; examination of the urine and

blood was negative; the abdominal muscles were very strong, the recti especially, forming thick, tumor-like masses on slight provocation. He put the patient in a bath at 120°, and it was then easy to feel not only the splenic and lower renal region, but also the under surface of the liver and even the vault of the diaphragm on the left side. The kidneys were not enlarged. There was no evidence of disease. After explaining that he thought the muscle tumors had misled some of the previous physicians, the patient explained the unusual size of these organs. In earlier life he had been an athlete, and one of his specialties was supporting his head and heels on two chairs, and, keeping his body rigid, supporting three or four men on his abdomen. The patient's symptoms could be readily ascribed to overwork and worry. He was advised to think no more about his abdominal tumors. More than three years has elapsed since the examination, and although some of the symptoms are still present, yet the idea of possible disease requiring operation has long since been abandoned.

In another case a girl of fifteen complained for several months of more or less severe pain in various parts of the abdomen. Various diagnoses were made, the last one before he saw the patient being enlargement of the liver and spleen. On examination he could find no evidences of local disease in the abdomen, and for some time he could not believe that the patient had any disease there. Later, however, the complaints being constant, he examined the patient in a hot bath. The abdominal wall was well developed and strong, but permitted a fairly complete examination in the ordinary way. In the hot bath, however, it was comparatively easy to feel in the right iliac fossa a mass about two inches long, and having about the diameter and hardness of a lead-pencil. Though in the appendix region, the consistency was much too hard for the normal appendix, such as one can frequently palpate in favorable cases. Dock made a diagnosis of appendicitis, notwithstanding the fact that there was no history of fever, nor positive history of tumor or other local symptoms of appendicitis. On his advice an operation was made. The appendix was found to be hard and had numerous fine adhesions to the surrounding tissues. It was removed, and the patient made a good recovery. Microscopic examination showed extensive chronic disease of the appendix, especially involving the muscular coat and the peritoneum.

In diseases of the gall-bladder and of the liver and pancreas, examination in the hot bath very often adds largely to the knowledge obtained by palpation, and should not be omitted in obscure cases.

BLEEDING IN THE TREATMENT OF UREMIA.

The *Journal of the American Medical Association* of May 5, 1900, points out that it is probable that bleeding will never be employed again to the extent it has been in the past; but the question is frequently raised whether it is at present being practiced to the degree that its efficiency makes it worthy of. There can be no doubt that there are certain conditions that nothing will relieve so promptly and so certainly as will free venesection. One of these consists in the state of venous stasis resulting from failure in the activity of the right heart, whether due to degeneration of its muscular wall, or secondary to similar failure on the part of the left heart, or to pulmonary obstruction, or to regurgitation through the tricuspid valves. Probably some conditions of local hyperemia or stasis, as of the brain or the lungs or the kidneys, may be relieved by the same measure. Then there is reason to believe that various toxic states, such as diabetic coma or uremia, or such as sometimes occur in the course of infectious diseases, can be ameliorated by free bleeding, and the results are probably even more satisfactory when subcutaneous infusion is practiced at the same time. By the bleeding it is hoped to remove from the circulation certain noxious substances that have failed of elimination through the natural channels, either because of their production in excess or because of deficiency in the functional activity of the emunctories; and by the infusion to maintain the mechanical integrity of the circulation, and perhaps also to effect dilution and elimination of toxins remaining in the tissues. It is a question, however, whether sufficient of the poisonous matter can be removed by even a free bleeding to bring about a distinct effect on the general condition, although it may be that when the system is partially relieved it becomes capable of ridding itself of the remaining incubus.

After all has been said, however, the fact remains that a satisfactory explanation of

the mechanism by which the therapeutic effects of bleeding are brought about has not yet been forthcoming. In view of this fact Richter undertook a series of experiments with the object of deciding the question in so far as it concerns uremic intoxication. He points out that uremia may be accepted as an indication of renal insufficiency. Now it has been shown that this latter condition is attended with retention in the blood of the molecular products of disintegration, with increased molecular concentration. Increase of the osmotic pressure, as indicated by a reduction in the freezing-point of the blood, may under certain circumstances be considered the index of deficiency in the activity of the renal function. It has not, however, yet been demonstrated that this increase in osmotic pressure is the cause of uremia. In fact, on the one hand, increased molecular concentration of the blood in cases of disease of the kidneys may be unattended with uremic manifestations; while, on the other hand, it may be wanting in the presence of profound uremia. It is thought that increase in the osmotic pressure and the poison that gives rise to uremia have a common origin, namely, the proteid molecule. Richter has found, however, that profound uremia is invariably attended with increased molecular concentration of the blood. He undertook, therefore, to determine how the latter would be affected as a result of venesection, with or without subcutaneous infusion, in animals in which renal insufficiency was induced by previous treatment with substances capable of exciting nephritis, or which had been subjected to nephrectomy.

It has been shown that the normal molecular concentration of the blood is not influenced by bleeding alone. It was found, further, that the renal insufficiency that was developed slowly and gradually as a result of cautious administration of renal poisons, such as cantharidin and aloin—as indicated by increased molecular concentration of the blood—was not influenced by bleeding. A distinct parallelism was observed between improvement in the nephritic process and the degree of molecular concentration of the blood. With the disappearance of the symptoms of nephritis the reduction in the freezing-point was restored to the normal. Also when the molecular concentration of the blood was rapidly increased by the administration of renal poisons capable of inducing acute toxic nephritis, no noteworthy diminution in osmotic pressure was observed after bleeding, with or without subcutaneous infusion.

Although these observations fail to supply an explanation of the mechanism by which bleeding affords relief in cases of uremia, the results obtained clinically by this measure are not therefore to be impugned.

FURTHER OBSERVATIONS ON THE TREATMENT OF THE ABDOMINAL VISCERA THROUGH THE COLON.

TURCK, in the *Journal of the American Medical Association* of May 5, 1900, writes a paper with this title. He says in the course of its pages that continuous irrigation of the bowel produces effects slightly different from those of colonic lavage, and is indicated in impaction, acute gastroenteritis, and in the early stages of appendicitis. Rectal enemata have been used in appendicitis, but their effects have been more or less marred by deficiencies dependent upon the technique employed. The *modus operandi* of colonic lavage and continuous irrigation is much more complex therefore than would at first be assumed. They not only affect the circulation in the bowels, but also the general abdominal circulation. This effect is produced through their influence on the plexuses of the intestinal walls and on the ano-genital center. This center is one of the last reflexes to be extinguished during coma of any kind, and hence what affects it has a powerful influence on the abdominal and pelvic organs and on the central nervous system. This center has the widely diffused action which results in the influence of therapeutic and pathologic procedures on the hepatic, renal, and general circulation. The temperature and the mechanical influence of the procedures described play a part in therapeutic results through their influence directly on the nerve plexuses.

For several years, being convinced of its value by a lengthy experience, Turck has advocated the employment of colonic lavage in typhoid fever. There is no danger resultant on the introduction of small quantities of water at a time, it being allowed to siphon off before introducing more. There might be harm from using large enemata by what is known as "high injections," "rectal and colonic flushings," etc. These methods may be of more advantage used as a douche. There have been advocates of the use of large enemas of water in typhoid fever. The procedure has been warmly advocated by

Schnell and Henselä—Meseritz. These methods have been found to be especially of value in the early stages of typhoid fever. Despite the glowing eulogiums which this procedure has received, the introduction of large enemata (stretching the rectum and sigmoid flexure) has produced great weakening. This is not surprising when the fatigue attendant on the effort to expel from two to four pounds weight of water is remembered. With precautions, and with the proper technique, and with variations in temperature and time of treatment suited to each case, the rain or needle douche procedure will have decidedly potent effect in removing from the colon the toxin and contagious materials and in restoring the circulation. While it cannot be definitely stated that duration of the disease is shortened, still there is such an improvement in the lassitude, delirium, pyrexia, and other constitutional expressions of typhoid fever, and such a lessening of complications, that the value of the procedure is demonstrable to any one employing it. After a careful practical study of the methods in vogue during the past decade Turck considers this method of colonic lavage of most value. The treatment is contraindicated in cases where dilated heart or other grave cardiac lesions exist.

In severe proctitis and sigmoiditis very hot water sometimes acts as an irritant to the intestinal walls. Here water at the room temperature is preferable. Except in acute diseases damage will not result unless the treatment be continued too long. In cases of marked arteriofibrosis, when danger from hemorrhage may result from the employment of any active procedure, lavage is contraindicated, as it is also in advanced tuberculosis, as well as in cirrhosis in which the condition of the vessels may produce hemorrhage on slight strain. These contraindications are such as will occur in individual patients rather than in particular types of disease. They are therefore such as must be formulated by physicians as to the therapeusis of any patient.

In the treatment of the colon by water or air, single or double recurrent tubes are employed, according to the object to be attained. One with but one opening at the end is useless for colonic lavage. The tube Turck has devised for this purpose has a caliber of 23 A. or 35 F., and is one meter long. The end is tapered and the edges of the opening are beveled. On either side of the tube is a row of four small openings; above is a large side opening with sunken eyes, to prevent irritation in introduction of the tubes. The distance from the end of the tube to the end of the uppermost opening is 1¾ inches. The advantages of the tube are: The rapid and immediate return of the water injected, the absence of danger of trauma of the mucous membrane by siphonage, and a more equable distribution of the water, a matter of importance in the introduction of food or in local medications as well as in lavage. The double recurrent tube and 'needle douche" is indispensable when prolonged irrigation or lavage is needed. It is of value, as has been pointed out by Treves, Herschell, and Gillespie, in impaction as well as in obstruction from any cause. It is also useful in appendicitis. The sprinkler at the end of the tube is of value in atony of the colon, and wherever hot or cold water is indicated as a spray, "needle" douche, single or alternating. The "needle" or "rain" douche, or "sprinkler," has been employed for many years in the treatment of gastric or intestinal disorders. Up to 1894, when he first presented this procedure to the profession, no proper method suited to emergencies and destitute of disadvantages when carefully employed was in use for douching the stomach and intestines. There was a method which employed a single tube with a large opening and several smaller openings which was denominated a "stomach douche." The disadvantages and lack of efficiency of this procedure have already been pointed out.

The "needle" or "rain" douche admits of being turned into an electrode by introduction of a gyromele cable, thus producing a combined recurrent rain douche, with electric addition. This procedure has been employed by Turck for years with benefit in the treatment of the stomach.

It will often be found difficult to pass the sigmoid flexure, when this becomes necessary, with the ordinary rubber tube, as it is not adapted to this purpose. The passage around the colon, even as far as the cæcum, is now practicable with his colonic sound and irrigator. This consists of a double-curved metallic tube about sixteen inches in length, of such design and construction that it may be passed through the sigmoid flexure. The tube not only serves for the return flow of the fluid injected into the colon, but also as a sheath for the introduction of a flexible hollow metallic cable, which is a portion of the instrument. This cable, at its distal end, has a perforated olive-shaped head which

serves as a guide for passing the sound. The cable is hollow and may be employed for colonic distention. If this be done during the passage of the sound, the further introduction of the latter is assisted. The position of the cable tip can be determined by palpation, especially if the cable be rotated. The latter can also be employed as an electrode when necessary, and is of value as an adjuvant in both medicinal and dietetic treatment of the colon.

A frequent personal idiosyncrasy prevents introduction of water, especially hot water, into the colon. Its introduction is sometimes followed by collapse. The general atony of the bowel resultant on the enema habit is a comparatively minor though unpleasant expression of this condition.

THE PRACTICAL APPLICATION OF HAFFKINE'S PLAGUE PROPHYLACTIC.

The *Intercolonial Medical Journal* of March 20, 1900, has in its pages an article by BULL upon this important theme. He states that the occurrence recently of bubonic plague in the two adjoining colonies has rendered it imperative that precautionary measures should be adopted in Victoria. The wisdom of such a course has been further demonstrated by the bacteriological researches of Dr. Nelly, who has isolated the specific bacillus from the rats infesting the Melbourne wharves.

At the instance of the chairman of the Central Board of Health, a supply of Haffkine's prophylactic was speedily procured from India, and arrangements concluded for further monthly instalments of the vaccine. The vaccine as prepared by Haffkine is a pure broth culture of Kitasato's plague bacillus sterilized by heat, the result being a somewhat turbid fluid of a light amber color. Inoculation induces a mild form of the disease without glandular enlargement, and the immunizing effects so produced are more lasting than in the case of an antitoxic serum. The immunity is variously estimated to last from six to twelve months.

The operations are conducted in the offices of the Central Board of Health, a special room and appliances being provided for the purpose. The inoculation is made subcutaneously, and for anatomical reasons a site is selected high up on the left arm, posteriorly, there being few vessels and nerves of consequence in this region, and absorption is slow and thorough. The usual antiseptic precautions are observed. The skin is cleansed thoroughly with 1-in-20 carbolic acid solution. The needles and hypodermic syringe are sterilized in a boiling solution of carbonate of soda of a strength of 0.5 per cent, and when not in actual use the former are kept in absolute alcohol, and the latter is filled with 1-in-20 carbolic acid solution.

The dose varies with the age and sex; 2.5 cubic centimeters for an adult male, 2 cubic centimeters for an adult female, and 1 cubic centimeter for a child of ten years. For children under ten years 0.1 cubic centimeter is taken off for every single year's deficiency. Thus a child of four years would receive 0.4 cubic centimeter. Immediately after inoculation the needle puncture is protected with a pad of cotton-wool dusted with boracic acid, and held in position by a strip of adhesive plaster.

The results of inoculation are both local and general.

Beyond the momentary prick and a mild sensation of tingling there are no immediate local results. In the course of one to three hours the part becomes swollen, painful, and tender. During the next few hours the pain reaches its maximum severity, and is of a continuous aching character, more acute on movement. Pain is less marked in persons with abundant subcutaneous adipose tissue. The skin over the swelling becomes erythematous and tender. The swelling is always well marked, but lacks the brawny feel of cellulitis. The swelling extends downward, but usually stops short at the elbow; occasionally it spreads lower, and in two cases Bull has observed it reach the wrist. There may be a good deal of stiffness of the arm, chiefly on account of the pain. The pain is distinctly milder in twenty-four hours, and the local symptoms subside in the course of three or four days, or even earlier. No glandular enlargement has been observed in any of the cases.

The general symptoms commence with more or less malaise, nausea, headache, and anorexia. Pyrexia is usually marked in the course of six or eight hours, but subsides again at the end of twenty-four hours. It is desirable that a temperature of at least 102° should be obtained. Occasionally the pyrexia persists for two or three days, or is deferred until the second day. There is more or less insomnia on account of the pain. Headache may be severe.

According to the severity of the general

reaction, the cases may be divided into three classes:

Class I.—Temperature 102° or more; 104° was recorded in two cases. General symptoms severe—shivering, headache, nausea, vomiting, pains in back and legs, and insomnia. Pulse very rapid in one or two cases.

Class II.—More or less pyrexia. Temperature less than 102°, usually not above 100°. In many of the cases no record of the temperature had been taken, and reliance was placed on the patient's feeling of feverishness. Symptoms were less pronounced than in the previous class, the patient frequently describing the condition as one of influenza.

Class III.—No general symptoms whatever. The local reaction, however, was good in all cases.

The bulk of the cases belong to the second class. The general symptoms rapidly pass off, leaving perhaps some slight malaise and anorexia, which disappear in the course of three or four days. Except in the case of the first class, there is generally no interference with the daily avocation of the patient. In the majority of the cases no special treatment is required, but light diet, avoidance of stimulants, and a mild laxative are recommended during the first twenty-four hours.

Already several hundreds have availed themselves of the opportunity for vaccination afforded by the board, and in the event of an actual outbreak of plague in our midst, the degree of resulting immunity will be studied with interest.

THE SYSTEMATIC TREATMENT OF ECLAMPSIA BY CHLOROFORM AND CHLORAL.

Obstetrics for April, 1900, discusses this subject editorially about as follows:

Taken as a whole, the literature of eclampsia forms one of the most unsatisfactory chapters in the history of obstetrics. Conflicting ideas as to etiology and pathology lead, naturally, to the present conflicting ideas as to treatment, and to contradictory and bewildering statistics as to result. Perhaps, after all, the practical obstetrician need not feel that he is worthy of too great reproach for his inability to find a satisfactory treatment for a condition whose every-day phenomena are still unsolved riddles to the physiologist and the pathologist. When our laboratory scholars have agreed upon a theory as to the origin and life history of urea, perhaps we shall approach the solution of this perplexing problem. It is not our purpose, however, to discuss here the treatment of eclampsia in general, but rather to refer to one phase of the subject with reference to which there is substantial agreement among recent writers. In the treatment of eclampsia, as elsewhere, it should be the aim of the physician, if he cannot always do good, at least to avoid doing harm. And it is safe to assert that in the treatment of eclampsia in the past this rule has been honored in the breach rather than in the observance.

Which one of us, even if strong and in good health, would like to be subjected to the prolonged chloral and chloroform narcosis, happily not practiced as much as formerly, but still too much in vogue. If there is one thing in the treatment of eclampsia about which modern authorities are beginning to agree, it is the folly and danger of this kind of treatment.

It is significant enough that Ohlshausen and Veit, in the last editions of their work, while strongly advocating the use of morphine, and not advising the use of either chloroform or ether (except, of course, in operative procedures), admit the superior safety of ether.

Still more striking is the fact that such keen observers as Ahlfeld, while holding diametrically opposite views as to the induction of labor and the operative treatment, unite in proclaiming the danger of prolonged chloroform narcosis. "It increases the tendency to death," says Smyly, as the result of many years' observation at the Rotunda. Fritsch, too, in a recent summary concludes that many deaths have been caused by this kind of treatment in cases which might otherwise have recovered.

The employment of anesthesia in the various obstetrical operations which may form part of the treatment of eclampsia is, of course, indispensable, but its long-continued use, simply for the purpose of suppressing the convulsions, is a source of danger both to mother and child.

Even in operative procedures we should not relax our vigilance. Dührssen has called attention to the occasional occurrence of sudden death at the very beginning of chloroform narcosis in cases of eclampsia with much uterine distention. In such cases it would seem to be a wise precaution to rupture the membranes before beginning the administration of the anesthetic.

DRUG VALUES AS OBSERVED IN THE MANAGEMENT OF 752 CASES OF WHOOPING-COUGH.

The *Archives of Pediatrics* for April, 1900, has in it an article by KERLEY, which he closes with these words: "We have learned: (1) That every case of whooping-cough may be ameliorated either by modifying the severity or by diminishing the number of paroxysms. In many cases both the severity and number of the paroxysms may be favorably influenced. (2) That remedies sedative in character, with fresh air, furnish the best results. (3) That if a remedy is to be of service its beneficial effects will be noticed within twenty-four hours, always within forty-eight. (4) That the best results are obtained when antipyrin and bromide are commenced at the height of the paroxysmal stage, and then pushed. (5) That these remedies being sedative in character, the effect may be lost in a prolonged case requiring a change of treatment. (6) That children may have whooping-cough, and never whoop."

ON BACKACHE AS A SYMPTOM OF RECTAL DISORDER.

FREELAND contributes a paper with this title to *The Lancet* of April 21, 1900. For the relief of the catarrh of the bowel which often causes this pain he knows of no more satisfactory remedy than ichthyol in doses of from five to ten grains or more night and morning. It relieves the congestion, improves the appetite, and stimulates the peristalsis. Quinine in two-grain doses will also in some cases be found beneficial. Theoretically, no doubt, bearing in mind the prime cause, a complete cessation from work and a change of scene and air would be indicated; but usually the necessity for sticking to business, which is the prime factor in the case, still exists, and it is very seldom that the patient can be induced to relinquish his calling. Even if he could be persuaded so to do, it is a great question whether the anxiety over business neglected would not be a greater evil than the mental strain caused by a moderate amount of business done. Practically, therefore, he thinks that it is wise to steer a middle course, advising the patient to curtail his hours of work, to spend as much time as possible in the open air, to indulge in a moderate amount of exercise, to partake of as much good plain food as he can digest, and, in short, to adopt regular habits of living generally.

Let it not be thought, however, that Freeland wishes to convey the idea that such cases occur exclusively among men; on the contrary, they occur with equal if not greater frequency among women, who, allowing for differences in habits, mode of life, and environment, conform mainly to the same type. His only reason for laying special stress on the occurrence of such cases among men is that he is anxious to eliminate all idea of the uterus as a causative factor. But the aspect of such cases is not always quite so simple, and the pain or discomfort is not always due to what may be termed functional causes, but in many cases may be traced to more or less serious organic disease—*e.g.*, piles, ulcer, and cancer.

THE PRODUCTION OF LOCAL ANESTHESIA IN THE EAR.

The Lancet of April 21, 1900, has in its pages an article on this topic by GRAY. He tells us that with a view to finding some vehicle which would dissolve cocaine and at the same time penetrate the tissues rapidly without destroying them, he tried various solvents. The first which suggested itself was alcohol in the form of rectified spirit, but this was absorbed too rapidly, and, moreover, it caused in some cases rather severe burning pain before the cocaine took effect. Various combinations of the volatile oils with rectified spirit were next tried, but as these solutions were only to a slight extent miscible with water they proved unsatisfactory. Finally, he tried a mixture of anilin oil and rectified spirit, and this he found met the requirements of the case admirably. It penetrates rapidly, is miscible to a considerable extent with water, and does not destroy the tissues. For experimental purposes he made up the following solution: 5 parts of cocaine hydrochlorate, 50 parts of dilute alcohol, and 50 parts of anilin oil. This gives a strength of a little less than five per cent of cocaine. He placed a small quantity upon his own tongue, where it caused a sensation of warmth, followed by a feeling of numbness and temporary loss of taste in the part with which it came in contact. The same solution was then applied to the normal tympanic membrane.

The subject laid one side of his head upon a table, and about ten drops of the preparation was dropped into the meatus of the uppermost ear and allowed to run down on to the tympanic membrane. There was no pain following the instillation of the solution, and only a slight sensation of cold in the ear.

The head was held in the same position for a period of from three to five minutes, and at the end of that time the excess of solution was mopped out on pledgets of cotton-wool wrapped round the end of a probe. On examination with the speculum the membrane appeared to be a little more transparent than before and the normal reflex was dulled. A blood-vessel along the posterior margin of the handle of the hammer appeared to be more distended than before the application of the solution, a condition which would not be expected from the use of cocaine, at least so soon after its contact with the tissues. On passing a fine blunt probe down to the membrane the latter was found to be perfectly anesthetic in all its parts. The instrument might be drawn across its surface or pushed inward against it, but the sensations of pain and of touch were quite in abeyance, the subject only being able to hear the rubbing noise of the probe against the membrane. The membrana flaccida, the handle, and the short process of the hammer were also involved in the complete anesthesia. It is of interest to observe that the individual on whom the observation was made was the subject of a severe reflex aural cough, so that it was often difficult to examine the ear carefully under ordinary circumstances, as the cough began as soon as the speculum entered the meatus. Now on this occasion there was no cough at all as the result of examination, so that it is clear that the solution must have anesthetized, at any rate to a certain extent, the skin lining the meatus.

The beneficial effect which anilin oil seems to exercise upon suppurative affections of the middle ear is probably due to its power of extracting water from the tissues, the same principle, in fact, as that to which rectified spirit owes its value. Anilin oil dehydrates more slowly, however, and is also more slowly absorbed; further, it is not so volatile, and its effect is less violent, but lasts longer. In practice it will be found that the mixture of equal parts of anilin oil and spirit is very suitable. Ten or fifteen minims may be dropped into the ear and left there in the usual way once or twice daily. Various antiseptics may be dissolved in the solutions, but they do not seem to do much good, and some of the more powerful ones may do harm. Anilin oil seems especially indicated in cases where there are cholesteatomatous masses and much débris. It softens these masses and aids in breaking them down, probably by its great power of dissolving fats and oils.

The method of producing local anesthesia described in this paper is of course applicable to other mucous surfaces. Gray has used it for throat work, and although there is at first a slight burning sensation the subsequent anesthesia is more complete than with the aqueous solution. A five-per-cent solution is quite strong enough for throat work, and owing to the large surface for absorption he never uses it stronger. Another useful solution in throat work is a five-per-cent solution in equal parts of glycerin and rectified spirit.

Gray is indebted to Professor Stockman for some interesting facts concerning the pharmacology of anilin oil. Of these the most important is that the medicinal dose is seven minims. Care, therefore, should be taken that not more than this amount may be absorbed, though in the ear such a contingency is very unlikely.

RECENT ADVANCES IN THE TREATMENT OF INSOMNIA.

WILCOX writes in the *Medical News* of April 14, 1900, upon this subject. He tells us that chloretone is a derivative of chloroform and acetone, and is also known as acetonchloroform; it is chemically described as a trichlor-tertiary-butyl-alcohol. When caustic potash is gradually added to equal weights of chloroform and acetone a reaction ensues which results in this new substance, which is isolated by steam distillation for the removal of whatever of the two principal substances may be found to exist. Having been cooled, after the removal of water by melting, it appears in white acicular crystals with a strong odor of camphor. In chloroform, acetone, strong alcohol, ether, benzin, and glacial acetic acid, it is freely soluble; in cold water it is soluble to the extent of one per cent, which corresponds in therapeutic value to a four-per-cent cocaine solution. It is a hypnotic, but that does not limit its applicability. It is an analgesic of value, and very successful as a local anesthetic. For the purposes of this paper he restricts himself to its hypnotic uses.

After pointing out that it is a good theoretical hypnotic, he passes to the other requisites which it possesses. And here we must call upon the clinical history of the use of this agent.

First, its safety. The customary dose is from six to eighteen grains, yet we have record of a case in which the patient through misadventure took as many as

thirty-six tablets of three grains each, in all 108 grains of the substance, and while cast into a profound sleep for three days, he did not present, either during this sleep or after restoration to consciousness, any symptom to cause the least alarm.

Secondly, its reliability. In all the use which has been made of this substance, it has never yet failed of prompt action for the purpose for which it was administered.

Thirdly, ease of taking. Chloretone is given in the form of rapidly disintegrating tablets, which are, of course, practically devoid of taste. In crystals it is given either in capsules, which are absolutely tasteless, or even in the uncovered powder, in which the only taste is a not unpleasant flavor of camphor, which is found quite volatile and evanescent.

Combining these statements of constitution and clinical observation, it is shown that in every particular chloretone is our closest approximation to that theoretical hypnotic to which we have been led through a study of the working hypothesis of the sleep-phenomena.

Now a word in conclusion of this brief paper, a word to indicate after what manner chloretone acts. The laboratory experiments show us that chloretone, as chloretone, passes unmodified from the digestive tract into the blood, where it may be isolated. The blood conveys the chloretone to the different organs, and there seems in laboratory experiment sufficient warrant for the belief that it has a selective action on the central nervous system. Here, then, or in some other region of the body, that point not having yet been fully determined, the chloretone is burned down, and in the burning down produces its hypnotic effect. That it is really decomposed within the body appears from the fact that, volatile as it is, we do not find it in the expired air; nor has it been positively recognized in the urine.

Now, assuming that chloretone has a selective affinity for the central nervous system—and this assumption seems a very safe one—and still further assuming (and this seems equally safe) that it is there decomposed, we have the theory of its great hypnotic effect. The methyl radicles set free in the burning down are known to retract the dendritic filaments, the chlorine similarly derived to retract the protoplasmic processes. The dendritic filaments under the influence of chloretone lose touch among themselves; the protoplasmic processes are out of contact with the motor cells of the anterior horn of the spinal cord by the retraction of their end tufts. The condition which normal fatigue produces has been produced through our safe hypnotic, and sleep follows. The drug has not, in itself, produced insensibility, or even unconsciousness; it has only been used to bring about that cell-retraction which nature demands, and the cell-retraction has produced the refreshment of sleep without distinction as to whether the conditioning circumstance is due to the operation of fatigue or drug.

PERTUSSIS.

In an editorial the *Archives of Pediatrics* for April, 1900, points out that Letzerich, Afanassieff, and others have described a microorganism found in the sputum of patients suffering with pertussis. It is not certain that this is the microorganism against which all treatment should be directed, as some of the severe symptoms in this disease, catarrh of the air-passages and disturbances of circulation, are not influenced by bactericides. It is, however, because of the association of the paroxysmal cough with other symptoms that many plans of treatment find favor.

With one group of cases a medicine that lessens the frequency of paroxysms will be satisfactory, while with another group the same drug will only be moderately successful. A drug that would destroy the coccus would be the ideal one, but it may be questioned whether such a drug would relieve the mucous membrane of its catarrh and the lungs of all the dangers of inflammation.

The bacteriological consideration in the treatment of pertussis has been given, with our present rather limited knowledge, a careful trial, and it is shown that such drugs as bromoform and antipyrin act in a way other than as germicides in the influence they have in lessening the number and severity of paroxysms in pertussis. It cannot be claimed that the disease does not go through the usual stages during the administration of one or the other of these drugs. The treatment that finds the most favor is the one that lessens the frequency of the paroxysms and ameliorates the severity of some of the symptoms.

Antipyrin does diminish the intensity of the paroxysms and lessens the frequency of severe attacks. Its sedative action is increased by the addition of codeine or heroin.

Antipyrin is a coal-tar derivative, and its effect on the circulation and on the blood must not be overlooked.

Bromoform has had a fair trial, and its effect is not sufficiently satisfactory to urge us to favor its use in all cases. Occasionally it does well, so well that its action is almost miraculous, but it may have no effect on the cough even in doses that are barely tolerated.

The bromides and chloral are drugs that deserve more extended use; the former for administration in the daytime, particularly to nervous children who are greatly disturbed by pertussis, even when not of a severe type. Chloral will often insure a night of quiet when other means have failed.

In belladonna we have a most valuable agent, one that will, when given where there is congestion and swelling of the mucous membrane with a free secretion of mucus, ameliorate all of the symptoms and be a successful means of treating many cases of the disease.

It is well to recognize that all of these drugs are symptomatic, and we may have to combine with them other agents also symptomatic. We may give ammonia for difficult expectoration, alum for free mucous secretion, and malt with cod-liver oil to sustain nutrition.

A patient with pertussis should not be allowed to go without treatment, and the condition of the child should receive careful attention, as a specific has not yet been found that will prevent loss of strength and the danger of inflammation of the lungs.

Hygiene, environment, nutrition, and other factors that enter so largely into the well-being of a growing child, should be given detailed attention, for without this care a drug, no matter how serviceable, will often fail to relieve a patient with whooping-cough.

PATHOLOGY AND TREATMENT OF TYPHOID FEVER.

The *Physician and Surgeon* for March, 1900, has in it an article by DOCK, in which he tells us that one of the most remarkable facts in the history of typhoid fever is this: that the cold-bath treatment, begun as a purely antipyretic method, has survived the antipyretic medication and is now used for reasons not thought of originally, but very obvious in the light of our altered views concerning fever. He does not discuss this method in detail, but merely points out in passing that a recorded experience of unusual extent in all parts of the world shows beyond question the value of the bath in counteracting the poison of the disease. We see this in the stimulation of the heart and circulation, thus leading directly to a better nutrition of all the tissues, and an increased secretion and excretion on the part of the various organs, especially the kidneys, liver and stomach, and intestines; in the stimulation of the central nervous system, so leading to clearer intellect, voluntary expression of sensations, increased desire for food and drink, and more and better sleep. Incidentally, the bath, though not comparing with antipyretic drugs in the temporary effect on the fever heat, has nevertheless an effect of some importance on the temperature. One effect of the bath should be emphasized, for it seems to have an important connection with the view that the intoxication is more important than the high temperature. This is the diuretic effect, which was early noticed by the French advocates of the Brand treatment, and by many since then. Dock has always paid special attention to this point, and has every reason to reiterate some statements he made on the subject four years ago. Not only do we get under the bath treatment a greater excretion of water, but the total solids are distinctly increased, and although we have no objective means as yet of proving that this frees the body from the poisonous products of infection, yet it can hardly be doubted that this is so, and that the greater amount of fluid sent through the kidneys more certainly and more effectually removes injurious substances than would any drug acting only on the intestinal canal.

The persistence and the increased use of the cold-bath treatment, in the face of an almost complete abandonment of the theory on which it was taken up anew forty years ago, is one of the most interesting facts in practical therapeutics, and shows how "*probiren geht über studiren.*"

All proposed methods of treatment of any disease must sooner or later be examined in the light of experience, which naturally tends to resolve itself into statistics. In using this method in typhoid fever we must not forget certain important facts that have altered our general standpoint. The mortality of typhoid fever is now, and for a number of years has been, lower than at an earlier period. A number of things can be said to have brought this about. In the first place our diagnosis is undoubtedly more compre-

hensive than before, and includes many cases less dangerous than the average. In the next place all the details included under the terms nursing and care—so important in practice, but impossible to discuss in a single evening—have been infinitely more rationally applied than ever before. How much all these things count was well understood by all who saw certain army hospitals in 1898, where the lack of nursing, in the technical sense, permitted one to see many of the complications long banished from typhoid wards.

TREATMENT OF ACUTE LOBAR PNEUMONIA.

The *Medical Record* of April 21, 1900, calls attention to the fact that it is now generally conceded that microorganisms play an important part in the causation and progress of pneumonia, and consequently the disease must be given a place among the infectious maladies. The investigations of Klebs, Friedländer, Fränkel, and Sternberg have quite definitely settled this point. Therefore it would seem that the time has come for new methods of treatment to be put into practice. It used to be the invariable custom to bleed freely and to administer heroic doses of antimony to all sufferers from this complaint. This was the routine treatment in every principal medical school of the world. Hughes Bennett was the first English-speaking physician to point out the defects of this treatment, and he published statistics some years ago showing that medical interference did very little toward the cure of the complaint. Balfour, of Edinburgh, at the time when that school was a veritable stronghold of the antiphlogistic methods, went to Vienna and was astonished to find that Skoda gave those under his care who were attacked by pneumonia nothing but hay tea, and moreover obtained better results than did the Edinburgh physicians. Ultimately venesection and the giving of large doses of tartar emetic were almost entirely abolished, although many eminent authorities believe that in certain cases both bloodletting and antimony are of decided benefit.

Sir Hermann Weber says: "The prejudice against the use of small doses of antimony and against bleeding in moderation in suitable cases is entirely unfounded." Sir Samuel Wilks and Sir William Gairdner are of the same opinion. Dr. Edward F. Wells, at the last meeting of the American Medical Association, spoke of the efficacy of venesection in plethoric persons, and considered that in these cases the procedure had no satisfactory substitute. He also recommended a simultaneous subcutaneous injection in the chest of decinormal saline solution or the use of an enema of the salt to replace the quantity of blood withdrawn. Dr. Hobart A. Hare at the same meeting said that he believed that the abortive treatment by venesection, aconite, and veratrum viride was applicable only in a few vigorous cases. Sir William Broadbent (*Practitioner*, March) opines that "in a large proportion of cases it cannot be said that the regular administration of medicine of any kind is necessary, but it is usually a comfort to the patient and friends to have the feeling that something is being done."

In regard to the germ theory of pneumonia, and referring to the investigations of scientists to establish its correctness, Dr. Pye-Smith, in Allbutt's System of Medicine, says: "While recognizing the interest and importance of these laborious researches, we must observe that even the diplococcus of Talamon and Fränkel does not fulfil Koch's three tests of a pathogenic organism—as they are fulfilled, for instance, in anthrax, relapsing fever, and tuberculosis: It is not invariably present in the tissue of pneumonic lung; it does occur in other situations in health when injected as a pure cultivation; it does not always reproduce itself and cause a fresh case of hepatization of the lungs. Nevertheless, the frequency of its occurrence and the fact that it often reproduces the disease by inoculation make it probable that it plays an important part in the natural history of pneumonia."

Dr. Andrew H. Smith, in his exceptionally able monograph on the subject in the Twentieth Century Practice of Medicine, vol. xvi, believes that pneumonia is not an inflammation of the lung, for the reason that in his opinion it does not affect the nutrition of the organ, but is a process of germ culture in which the pneumococcus grows in a culture medium supplied by the functional capillaries of the lung. The majority of writers do not agree with Dr. Smith in this view. Dr. James K. Crook, in *Medicine* for April, 1900, thus expresses his opinion on the matter: "From the author's study on the subject, he would fully agree with Dr. Smith that the process is one of germ culture, but it may also be as properly described as an inflammation, as are the conditions set up by the

same microbe elsewhere, viz., in the pericardium, the pleura, and the joints. It is, of course, a special form of inflammation produced only by special forms of microorganism and not analogous to inflammations elsewhere, because the lung itself has no analogue elsewhere in the body." Time, however, alone can prove whether Dr. Smith is right or wrong.

In the meantime the question before us is whether the knowledge that acute lobar pneumonia is an infectious disease has afforded any firm grounds for the hope that it may be possible to abort the disease. Again on this point there is a great divergence of opinion. Most authorities hold that such an expectation is not justified by the extent of our present knowledge. Dr. Smith, with many others, thinks that this may be done, and argues that therapeutic efforts should be directed to the arrest or inhibition of the germ culture from which the diplococcus obtains its nourishment. He claims that inasmuch as this culture medium is derived from the blood, any substance added to the latter will also be found in the former, and if that substance is inimical to the growth of the coccus, it will in so far act in the direction sought. The fact that the pneumococcus is the most vulnerable of the germs is in favor of this argument. Creosote, calomel, quinine, and salicylate of sodium are the drugs possessed of germicidal properties best calculated to produce the desired effect. Leaving out of the question the first three drugs we will briefly consider the use of salicylate of sodium in the treatment of pneumonia, as demonstrated by the experience of some who have witnessed its effects.

Sir Hermann Weber, in the *Practitioner* for February, writes as follows: "Salicylate of soda was tried in quantities of 20 to 40 grains per day at the German Hospital, London. The effect was quite satisfactory on some persons in diminishing the pyrexia, the pleuritic pain, the thirst, the dry heat of the skin, and perhaps also slightly the duration of the acute stage, but scarcely sufficiently marked to be quite sure. In other persons the excessive perspiration produced by the remedy, and the noise in the ears, rendered this treatment disagreeable; the most objectionable effect, however, on some persons was excessive headache, and on some others the appearance of blood and albumin and casts in the urine, so as to oblige us to stop the remedy. Although it cannot be denied that in some cases the salicylate acted beneficially, it produced, as just stated, in others unpleasant and in some even injurious effects."

Pye-Smith refers to the use of the salicylates in these words: "Salicyl compounds are only indicated when pneumonia occurs as a complication of rheumatism." Dr. de Becker recommends salicylic acid for acute pneumonia (*Annales et Bulletin de la Société de Médecine d'Anvers*, March and November, 1898), and believes that if administered at an early stage of the disease it is a sure preventive. Eleven out of twelve patients treated thus by him were quickly cured. He has also noted that the expectoration after the use of salicylic acid becomes liquefied, and is of the opinion that in the giving of the drug the expectoration should be the guiding symptom. Debility and heart disease should contraindicate this treatment.

The two most favorable reports of the action of salicylate of sodium come, one from Austria and the other from this country. The first stated that a series of seventy-two cases of pneumonia occurring in Austria had been treated with large doses of sodium salicylate—120 grains daily. All of these patients had recovered, and in not one had the disease terminated by crisis. The second report was published in the *Medical Record* of April 22, 1899, by Dr. Sebring, of Kingston, N. Y., and deals with seventy-five cases of pneumonia treated with 120 grains daily of the same drug, with the result that but one patient died. Dr. Sebring also says that out of one hundred and twenty-five cases of pneumonia treated with salicylate of sodium in his neighborhood, only one proved fatal. Of course these results are magnificent, and if the drug should be found as effective after a more extended trial the problem of how best to treat acute lobar pneumonia will be solved once and for all. Until its use has been more wide-spread than is at present the case, it will be as well to express no pronounced opinion as to its curative properties.

Investigators have not as yet succeeded in preparing a reliable antitoxin for pneumonia, although de Renzi has used the serum prepared according to Pane's instructions since 1896 in grave cases of pneumonia, and states that his former mortality in such cases of twenty-four per cent fell under the treatment to nine per cent. The data at present available do not warrant us in arriving at a definite conclusion as to the value of this treat-

ment. A great step in advance has been made in establishing the microbic origin of lobar pneumonia, and it behooves us patiently to await the discovery of the most effective means of meeting the attacks of those pathogenic organisms responsible for the condition. There have been up to the present time no sufficiently strong reasons brought forward for altering the existing expectant methods of treatment.

MOUTH-WASHES TO PREVENT DENTAL CARIES.

The *Journal des Praticiens* of March 31, 1900, states that for the purpose of preventing caries of the teeth we must be careful to maintain perfect asepsis of the mouth, particularly during the sleeping hours; otherwise fermentation may take place in the organic material left between the teeth or against the buccal mucous membrane. For this reason Huchard employs the following antiseptic solution with good results:

Crystallized carbolic acid, 1 drachm;
Eucalyptol, 15 minims;
Menthol, 7 grains;
Thymol, 2 grains;
Alcohol (90-per-cent), 3 ounces;
Enough cochineal to add proper coloring.

This is to be employed as a mouth-wash after it has been diluted with three or four parts of hot water. Instead of this the following solution may be employed:

Crystallized carbolic acid, 1 drachm;
Eucalyptol, 15 grains;
Salol, 30 grains;
Menthol, 4 grains;
Thymol, 2 grains;
Alcohol (90-per-cent), 3 ounces;
Tincture of cochineal, enough to make a proper color.

This is to be employed in the same way with hot water.

Still another formula consists of:

Chloral, 3 drachms;
Essence of peppermint, 30 minims;
Alcohol (90-per-cent), 3 ounces.

This should also be employed and mixed with hot water in the way indicated.

Still another formula is the following:

Chloroform, 1 drachm;
Crystallized carbolic acid, 1 drachm;
Eucalyptol, 10 drops;
Peppermint water, 3 ounces.

Also to be employed with hot water.

As another prescription in the nature of a dentifrice we may mention:

Carbolic acid and salol, of each 1 drachm;
Essence of peppermint, 2 drachms;
Alcohol (90-per-cent), 4 ounces.

Five or ten drops of this solution is placed in a glassful of hot water.

A powdered dentifrice may be made up as follows:

Salol, 1 drachm;
Phosphate of lime and carbonate of lime, of each 5 drachms;
Light magnesia, 5 drachms;
Bicarbonate of sodium, 4 drachms;
Essence of peppermint in sufficient quantity to make the proper odor.

This is to be carefully mixed into a homogeneous powder, and can then be employed upon the tooth-brush as a dentifrice.

THE ABSORPTION OF IODIDE BY THE HUMAN SKIN.

According to *La Semaine Médicale*, ZALLARD has applied the iodide of sodium in the form of a watery solution to the skin of lower animals, and also to the skin of human beings, in an endeavor to find out whether a solution of the iodide of sodium of the strength of five per cent is absorbed in considerable quantity so that it can be obtained in the urine. As a result of his investigation he finds that it is so absorbed, and that it is quite slowly eliminated. He believes that a sufficient quantity of the drug may be absorbed through the skin, particularly if large areas of the skin are wet with the solution, or if the body is immersed in it, to produce very distinct therapeutic effects.

A PRESCRIPTION FOR THE RHINOPHARYNGITIS OF CHILDHOOD.

According to the *Journal des Praticiens* of March 31, 1900, AVIRAVNET recommends the following prescription:

Sterilized olive oil, 6 drachms;
Resorcin, 15 grains;
Essence of peppermint, 2 drops.

This mixture is to be injected into the nasal chambers of the child after the mucous membrane has been thoroughly cleansed by a spray of salt solution. About fifteen minims of this solution is usually used for the injection. This operation should be repeated morning and night. It is asserted that this injection is not painful, and that the presence of the menthol makes the resorcin very much more comfortable. After a few days the injection can be replaced by an ointment con-

taining menthol. Under these circumstances it is asserted that the rhinopharyngitis usually completely disappears.

Should there be an association with the rhinopharyngitis of a good deal of swelling and inflammation in the tonsils, it may be well to paint these glands with glycerin and borax, or with a solution of iodine in glycerin, according to the formula which is recommended in most books upon this subject. Should there be granulations in the pharynx, it may be necessary to employ the galvanocautery before a positive cure can be promoted. Should there be adenoid vegetations, surgical removal of these growths is of course necessary before a cure can be produced.

THE INFLUENCE OF ALCOHOL TAKEN BY THE MOTHER UPON THE FETUS AND CHILD AT THE BREAST.

According to *La Semaine Médicale* of April 4, 1900, NICLOUX, from the results of a series of experiments, concludes that alcohol passes from the mother to the fetus, and that it is also eliminated in the milk, and therefore he believes that a child may develop the alcohol habit not only when at the breast but during fetal life. In other words, it is possible for a child to go into collapse because of the lack of its customary alcoholic stimulus a few hours after its birth, just as it is possible for a child to suddenly become collapsed under the same circumstances when the mother has been a morphine habitué during pregnancy. If these citations of Nicloux are correct, an interesting fact has been added to our knowledge concerning heredity, because under these circumstances it will be proved that the child becomes accustomed to alcoholic stimulation in intra-uterine life, and that its desire for alcohol after birth, or in after years, may be due not so much to the fact that its nervous condition is perverted in the sense that it inherits a depraved constitution, as in the sense that it has developed what might be called a prenatal desire for stimulation.

THE INFLUENCE OF SALICYLIC ACID UPON THE GENERAL SYSTEM AND THE SECRETION OF BILE.

The *Journal de Médecine de Paris* of April 8, 1900, contains an article upon this topic. In concluding the article the following facts are stated:

Under the influence of the salicylate of sodium, when administered to a person in perfect health, the following changes are noted: There is a slight diminution in the quantity of urine which is passed, and an increase in the coloring matter of the urine. There is also a distinct increase in the urinary acidity and a great increase in the quantity of uric acid which is present. In regard to the influence of salicylate of sodium upon biliary secretion, it is a noteworthy fact that the administration of the salicylate of sodium results not only in an increase in the liquid of the bile, but also in the solids. For this reason the administration of this substance is useful in many cases not only because it acts as an antiseptic in the gastrointestinal tract, but also because by reason of the increased quantity of bile which it causes to be poured out in the intestines it tends to produce antisepsis.

GASOLINE AS A SURGICAL DETERGENT.

In the *Canadian Practitioner and Review* for June, 1900, RIORDAN suggests a novel plan of treatment. He calls our attention to a new surgical detergent which has been in use for years in the arts, namely, gasoline—commercial gasoline. It can be had wherever grocers are found, and has the advantage of being inexpensive, and, being a distilled product, is sterile in itself. Gasoline is a product of the fractional distillation of crude petroleum. On distilling this body, the first distillate consists principally of rhigolene; the second is gasoline, which passes over at between 60 and 90 degrees. The average yield is about 1½ to 2 per cent; refined naphtha, 10 per cent; benzine, 4 per cent; paraffin, 2 per cent.

Gasoline consists of the lighter boiling liquid members of the $C_nH_{2n}+2$, or paraffin series. It dissolves fats and oils. Its principal use is as a cleansing agent.

Riordan has been using gasoline for the past four years in cleansing the field of operation, in cleansing traumatic wounds, and in the subsequent dressings of all classes of wounds—not using water or other lotions or solutions—and can now recommend a trial of this common detergent in ordinary surgical work. He was led to use gasoline first for the purpose of cleansing from injured parts what railway employees call black oil. We all know how black and grimy are the hands of railway employees engaged in shop work and about locomotives. While working in their ordinary occupation an accident occurs—fingers are crushed, for instance.

The injured person comes under the surgeon's care. The surgeon's first duty is to see that the injured parts and the surrounding tissues are thoroughly and surgically deterged or made surgically clean. Soap and warm water with a brush has been the usual means employed, also ether, alcohol, etc. He found the process to be slow, painful, and not always thorough, as we understand surgical cleanliness, and the idea of using gasoline as a detergent readily suggested itself, as this substance has been used for years to cleanse grease stains from clothing, gloves, etc. He finds that it does not irritate fresh wounds or granulating surfaces any more than water does. It is best applied by taking an ordinary wipe, made of cotton-batting or sterilized gauze, and wiping the parts which it is desired to cleanse. The gasoline immediately evaporates and leaves the surface dry and perfectly free from grease. This will be found an advantage where sectional strapping by adhesive plaster is to be used, as the plaster adheres much more firmly when the skin is free from any oily substance.

Riordan's results, so far as early healing and absence of infection are concerned, have been most satisfactory, and include the treatment of all classes of wounds; and he cannot too strongly recommend gasoline as the best surgical detergent. He acknowledges his indebtedness to his friend Dr. Goldie, of Toronto, who is a practical bacteriologist, for the following notes on gasoline as a detergent and antiseptic: "I have carried out in part the experiments in regard to the detergent and antiseptic properties of commercial gasoline. Weighed scrapings from the same arm from areas roughly two square inches were plated out, after washing with soap and water for five minutes, and after scrubbing with gasoline for two minutes; also without any preparation. Unsterilized skin gave 173 colonies; soap and water, 20 colonies; gasoline, two minutes' scrubbing, 16 colonies. Scrapings from skin, scraped with soap and water, then dressed with 1-to-60 carbolic over night, gave for same weight of scrapings 22 colonies. Gasoline poured on skin without rubbing gave 84 colonies. Repeated with scrubbing with cotton wipe, gasoline gave only 7 colonies. Staphylococcus pyogenes aureus smeared on the skin as a film remain alive at the end of two minutes exposed to gasoline. I shall continue the experiments more fully and let you have report at early date."

This report corroborates Dr. Riordan's claim, that gasoline is a valuable detergent, and may yet be found to be antiseptic.

He says there is little need of caution about the dangers of gasoline, but he would remind us that it is very inflammable. It should not be used carelessly near an exposed light. If it gets into cavities, such as the ears or eyes, it is irritating, just as chloroform or ether is. If applied to a surface where it can rapidly evaporate it gives a cooling, pleasant sensation.

In subsequent dressing of wounds it may be found that the dressings are adherent about the line of incision or suture. If a few drops of gasoline are squeezed on the adherent dressing it will be found that it can be readily detached.

If it is desired to remove sutures from a wound and they are masked by iodoform powder and exudations from wound, gasoline on a wipe applied gently will clear the field. Gasoline dissolves iodoform and the exudation from wounds, and then immediately evaporates, leaving a clean and dry surface. We can readily find our sutures and remove them.

Microscopic appearance of the skin after scrubbing with soap and water, and after wiping off the skin with gasoline, showed that the cleansing effect of gasoline went much deeper and cleaned out the mouths of hair follicles, sebaceous glands, and sweat ducts much more perfectly than scrubbing with soap and water could do.

THE TREATMENT OF RINGWORM ON THE SCALP.

JAMIESON writes in the *Edinburgh Medical Journal* for June, 1900, on this subject. He believes that in treatment the following are the rules to be observed: (1) The hair must not only be cut or shaved off, but the entire scalp must be kept bare of hair, by razor or curved surgical scissors, till the cure is complete. In this there can be no compromise. Those in care of the child are apt to evade this injunction, on the ground that to them the disease seemed cured; but the doctor, aided by the microscope, ought alone to be the judge as to when the hair may be allowed to grow. (2) Again, the scalp must be kept rigorously clean. It must be washed twice daily with a fluid superfatted potash soap and warm water, the soap being poured on a piece of wet flannel and moderate friction employed. Such a soap only will keep

the surface soft, polished, and adapted for the reception of remedies. The affected areas usually show a pinkish tint, as compared with the healthy, while the diseased hairs do not all grow in the proper direction. The application which has proven most efficacious in his hands is one modified from an old formula of the late Sir William Jenner. It consists of precipitated sulphur, 1 drachm; salicylic acid, beta-naphthol, and ammoniated mercury, each 10 grains; and lanolin, 1 ounce. For lanolin we may perhaps substitute vasogen, an oxidized vaselin, which is credited with enhanced absorptive powers; but his experience of it is yet too small to enable him to speak with confidence. One point of great consequence is that the ointment be rubbed in for ten minutes slowly and carefully twice a day. In this way the epidermis becomes charged with the antiseptics, the sulphur, mercury, and naphthol; while the salicylic acid favors the moulting of the diseased hairs while increasing the porosity of the skin. In compounding we may replace the naphthol by thymol, or we may use in exchange a salve of oleate of copper in the proportion of 25 to 50 grains to the ounce. Whatever we use the principle is the same—the steady saturation of the permeable epidermis with substances hostile to the fungus. In this way, and in this way only, in the present state of our knowledge, by patient insistence, we can cure the most refractory instances of ringworm of the scalp.

THE TREATMENT OF THE OPIUM HABIT BY THE BROMIDE METHOD.

CHURCH writes in the *New York Medical Journal* of June 9, 1900, that the method of administration which has gradually developed as the result of the experience of Macleod and his own observations may be formulated somewhat as follows: The drug should be given only in the daytime—120 grains of sodium bromide in half a tumbler of water every two hours, until an ounce is given in the first day. The second day a smaller amount is given in the same way, and this may be sufficient, or it may be necessary to continue the doses in the same way on the third day. Macleod says the safe rule is to cease the administration of the bromide after twenty-four hours, when drowsiness is so profound that the patient cannot be roused, or, when aroused, is incoherent. If the sleep continues or becomes deeper, no more bromide will be needed. It is to be remembered that the bromide acts in a cumulative manner. After the second or third day, when the bromide is withdrawn, the drowsiness, in some cases actual coma, tends distinctly to deepen for forty-eight hours, so that the fully developed sleep presents a rather alarming condition to any one not familiar with it. For two or three days there is difficulty in feeding the patients, and swallowing is sometimes impossible, so that rectal alimentation is required.

During this treatment there is apparently a tendency to aspiration pneumonia, so that feeding by the mouth becomes doubly dangerous. Any septic condition in the pharynx or in the antra communicating with the mouth should contraindicate the treatment. The poisonous effect of the bromide falls apparently upon the respiratory and cardiac centers, so that a weak heart or impaired pulmonary conditions would furnish reasons against the method. From the case of nephritis that Church has reported, which terminated fatally, it is strongly suggested that the bromide of sodium in large quantities acts harmfully upon the kidneys, if diseased, and therefore any degree of nephritis should be a contraindication to this line of treatment.

Three deaths occurring in twelve cases, although in each instance attributable only remotely to the bromide, and occurring where the bromide had been used in extraordinary doses—doses that can no longer be advised—show that the plan of treatment is very far from being simple and without danger. However, as compared with the difficulties of the ordinary methods that are pursued in correcting the addiction to morphine, it seems to Church to be of very definite value in well selected cases, and in such cases he should not hesitate, under appropriate conditions, to employ it. By appropriate conditions he means full hospital facilities.

THE MODERN TREATMENT OF DIABETES MELLITUS.

In *The Lancet* of May 19, 1900, SAUNDBY, who is well known as an authority on diabetes, writes that undoubtedly the greatest difficulty in feeding diabetic patients arises from the need to deny them both bread and potatoes. As already explained, the various bread substitutes are not entirely satisfactory, for those that contain little or no starch are not very palatable, while the more pleasant they

are to the taste the larger quantity of starch they are sure to contain. Besides, they are by no means inexpensive, and while quite beyond the reach of the poor, their cost is a matter of some consideration to all persons of moderate means who have many demands upon their incomes. The best white bread contains about sixty-three per cent of starch, and coarse brown bread about fifty per cent, and if we allow the very moderate quantity of an ounce three times a day we are giving 600 or 700 grains of sugar-forming substances, and it is to be feared that few patients would be content to use so little. If we give toast instead of bread, this contains about 1000 grains of sugar-forming material, which is more than many patients can tolerate.

Can any one tell why patients are so often allowed to eat toast without limit, as if toasting bread in some way deprived it of its starch, when all that heat can effect is to destroy so much as is actually burnt, and, weight for weight, toast contains a much higher percentage of starch than bread? Yet while toast is so frequently allowed, Saundby invariably finds that potatoes have been most rigidly forbidden, although they contain only a small percentage of starch—fifteen per cent for new potatoes and twenty per cent for old. Thus, six ounces of potatoes would not contain much over 400 grains of sugar forming carbohydrates. No doubt the actual percentage of starch is not an absolutely trustworthy guide to the assimilability of different articles of food, for, as already remarked, diabetic patients exhibit marked individual peculiarities in this respect; but as a rule potatoes are tolerated better than an equivalent quantity of bread, by which he means the quantity of bread containing the same amount of carbohydrates, and as the bulk of potato is three to four times as great it presents undoubted advantages. Six ounces of potato is quite enough for one meal at least, and with the other permitted articles of diet would enable the patient to dispense altogether with any bread substitutes.

Bread is best given in the form of toast. Toast contains about 320 grains of sugar-forming carbohydrates per ounce, and must therefore be given with caution; from an ounce to an ounce and a half is as little as a patient can do with at a meal, so that we see he may easily take the equivalent of 1000 or 1500 grains of sugar in a day, and unless his capacity for assimilating sugar is pretty good he is better without it.

Alcohol should be generally prescribed in the form of Scotch whiskey or the light wines of France and Germany. Scotch whiskey generally contains no sugar, and has a high heat-giving value, but it should not be allowed where there is any gastric disturbance, such as is frequently present in elderly diabetics; for these it is much better to use the light wines of France and Germany diluted with mineral water. As a rule we should not yield to the desire of our patients to drink beer unless they will be content to take it in the form of Harvey's sugar-free pale ale. Ordinary bitter beer contains about 500 grains of sugar per pint, which is of course not a very large amount if the patient is willing to give up an equivalent amount of other carbohydrate-containing food, but it is often neither possible nor desirable for him to do this.

If we are to proceed safely in making these additions to the diet of our patients, we should be careful to allow each of these "extras" separately, and to yield no further until the result has been ascertained by careful analysis of the urine. When the patient has a sufficient diet we should do well to maintain a sternly uncompromising attitude upon the question of further concessions. Even where the added articles of diet are quite well borne, it is very necessary for their effect to be watched, and in order to check the accumulation of sugar in the body we should recommend our patients to submit from time to time to what have been called "carbohydrate fasts"—that is to say, a patient should one day a week abstain altogether from the various extras which have been allowed, and if at any time there seems to be a tendency for the sugar to rise, strict diet should be taken for a week or two. It is only by such precautions that these indulgences can be permitted. The following tables are arranged as examples of what we may do on the ascending scale when we desire to add a certain amount of carbohydrates:

B Diet.	Heat units.	Carbohydrates in grains.
Two ounces of bacon	540	....
Three eggs	225	....
Two ounces of butter	480	....
Two ounces of cheese	350	....
One pint of milk	354	400
Six ounces of cooked meat	210	....
Six ounces of Callard's bread, etc.	50	175
Six ounces of green vegetables	50	250
Six ounces of potatoes	100	500
One pint of tea	0	0
Half a pint of bouillon	0	0
Totals	2359	1325
With half a pint of claret (50)	2409	
With two ounces of whiskey (210)	2569	

If the above diet is tolerated we may proceed to the next:

C Diet.	Heat units.	Carbohydrates in grains.
Two ounces of fat bacon	540	....
Three eggs	225	....
Two ounces of butter	480	....
Three ounces of cheese	350	....
One ounce of cream	60	....
One pint of milk	354	400
Six ounces of cooked meat	210	....
Six ounces of green vegetables	50	250
Six ounces of potatoes	100	500
Four ounces of toast	372	1276
Two ounces of Callard's sponge-cakes	50	....
Four ounces of fruit	10	40
Half a pint of bouillon	0	0
One pint of tea	0	0
Four ounces of coffee	0	0
Totals	2801	2466
With half a pint of claret (50)	2851	
With two ounces of whiskey (210)	3011	

In determining the value of these diets we must not be content merely to judge by the effect upon the urine, for it is quite natural that where the carbohydrates are increased there should be a greater excretion of sugar. The point is whether the patient is assimilating a considerable portion of the carbohydrates allowed.

RADICAL CURE OF EPITHELIAL CANCER BY ARSENIC.

The *Medical Record* of June 2, 1900, contains an article by TRUNECEK, of Prague, in which he first gives a detailed description of this method, and then the indications, and afterwards describes two typical cases in which a cure was obtained, concluding his remarks by briefly describing the mechanism of the cure of cancer by means of arsenous acid.

℞ Pulv. arsenous acid, 1 Gm. (gr. xv);
Alcohol. ethyl. absol.,
Aq. destillat., āā 75 Gm. (℥ ijss).
M. S: For external use.

The remedy as prescribed in the works quoted is a mixture of arsenous acid (As_2O_3) and of 75 grammes of ethylic alcohol (C_2H_6O), with an equal amount of distilled water. It is applied as follows: The ulcer is cleansed and dried; we must not be afraid of causing a slight flow of blood; indeed, it may even be necessary to scrape and denude a portion of the neoplastic tissue. The arsenical mixture is then stirred and spread with a brush over the whole surface of the tumor. Without covering it, it is left to dry, and if at the end of five minutes the patient feels no pain, another layer of the mixture may be spread over the cancer. No dressing is placed upon it.

The patient sometimes has pain after the application, but not of an unbearable nature. The next day, or perhaps not until the day after that, the neoplasm will be found to be covered with an eschar (especially in the denuded or scraped portions), which is not removed, but treated daily with the preparation of arsenic. Acute edema of surrounding parts may be caused by the application, in which case the treatment is suspended until the edema has completely disappeared, after which the remedy is used in less amount. The crust, thin and yellowish at first, becomes gradually brown, and finally black. The first day its base is firmly adherent to the subjacent tissue, and its removal would bring away a large amount of cancer substance. By degrees it thickens and invades the whole surface of the neoplasm. After a while its edges become less adherent and begin to be detached; the fissure thus formed becomes daily more marked, and a greenish fluid oozes out from the edges of the ulcer. Treatment is continued regularly until the eschar is freely movable, non-adherent to the subjacent tissue, and is easily removed, or falls of itself. This eschar is of variable thickness, is hard in consistency, and is essentially formed of cancerous tissue which has mortified under the influence of arsenic. The scab being removed, another application of the arsenical mixture is made to the bottom of the ulcer, but only once. If by the next day the author finds merely a yellowish crust which can be easily removed without causing any hemorrhage, he is sure that no cancerous tissue remains in the wound. If, on the other hand, there is a dark crust adherent to the subjacent tissue, the treatment is continued until the last cancerous cell has disappeared.

During the course of the treatment, as the eschar thickens, the amount of arsenic should be increased. Instead of the 1:150 solution used in the beginning, a 1:100 or even a 1:80 is used, according to this formula:

℞ Pulv. arsenous acid, 1 Gm. (gr. xv);
Alcohol. ethyl. absol.,
Aq. destillat., āā 40 Gm. (℥ xj).
M. S.: For external use.

When no vestige of cancerous tissue remains, the neoplastic ulcer is transformed into a granulating wound, covered with a fine whitish membrane, and possessing no induration anywhere. It should now be treated as an ordinary suppurating surface which is beginning to be covered with granulations. For the stimulation of the regenerating tissues an ointment consisting of one part boric acid to ten parts vaselin should be

applied, especially to the edges of the wound. Even when every vestige of cancer seems to have disappeared, it is well to make assurance doubly sure by occasionally making a light application of the 1:150 mixture until a cure is attained. When the neoplasm has been entirely destroyed, the applications no longer produce a black, adherent crust, and the alcohol contained in the remedy merely helps to cleanse the wound.

For superficial, non-ulcerating cancers, in which mere surface applications give no result because the remedy does not destroy normal epithelial and epidermal cells, we should proceed as follows: If the integument is very thin and adherent to the tumor, it will usually be all-sufficient to scarify slightly the adherent portion, and to apply the remedy in such a way that some of the arsenic will penetrate to the cancerous tissue. If the skin has not yet been invaded by the neoplasm, it will be found best to excise a small cutaneous flap with the scissors, and then to make an application of the remedy, leaving it as usual without dressing. The applications are repeated daily, and after three or four of them we see the tumor diminish in size and become dried. Treatment is continued up to complete cicatrization. The same method of procedure is indicated in the case of the cancerous nodules sometimes found under the adjacent skin during treatment or subsequent to the cure of a neoplastic ulcer.

Instead of using a brush, we may, if we prefer, fix a pledget of wadding on forceps, or wrap cotton around a probe, as Trunecek did in an undoubted case of cancer of the larynx, in which cure was obtained and has been maintained for two years. However, although the use of hair-brushes is not in strict accord with the laws of modern surgery and of asepsis, it must be acknowledged that a brush distributes the solution more regularly than anything else, and possesses the advantage of not irritating the granulating tissue.

TREATMENT OF MEMBRANOUS COLITIS.

The *Medical News* of June 2, 1900, has in it an article by THOMSON on this topic. He thinks, as to treatment, the first indications are to relieve the colonic symptoms proper, as they may be termed—that is, symptoms which are more or less common to all diseases of the colon, as pain and stiffness of the joints on movement are common to all varieties of arthritis. Thus, nothing is so soothing to the tenesmus, the cutting and bearing-down pains, and the general abdominal distress, as free irrigation of the colon with normal saline solution, to which may be added oil of peppermint, five drops to the pint. Three to five gallons, at a temperature of 100° F., may be employed once in twelve hours, and given by Kemp's rectal irrigator, according to the printed directions which are furnished with this simple and serviceable instrument. The relief which this hot douche affords is often described by the patients as very great, and as enabling them to sleep at night better than any other measure. Care must be taken that all the fluid is returned, lest any quantity retained may afterward provoke a return of pain, thus causing it to act as an enema. By a little practice, however, this may be avoided. Great quantities of mucus are thus dislodged and washed away, but it frequently happens that after the irrigation has been employed, the patient subsequently has a painless movement which consists of a large amount of simple mucus without shreds or membrane. Sometimes he has found benefit from using at the end of the irrigation a gallon of the water in which from 60 to 100 grains of resorcin has been dissolved, being careful that it is all expelled afterward. Once a week a pint of clean, hot water with 30 to 40 grains of silver nitrate may be used instead of the resorcin. Unfortunately, this irrigation is not curative, as it is in many cases of chronic catarrhal or chronic ulcerative colitis, for, although it serves the valuable purpose of eliminating the complication of direct colonic irritation which so often undermines the patient's health, and by so much aggravates the local processes of the disease, yet it does not deal with the nutritive change itself in the intestinal wall, but only with some of its effects. Nevertheless, it should not be omitted from the system of measures which should be adopted for the more or less prolonged methods of treatment needful in every essentially chronic disease.

The next question is, Have we any medicinal remedies which can be expected to be of service in changing the disordered nutrition of the intestinal mucous membrane. Thomson believes that we have one such remedy, and that is small, and what he says we may call alterative, doses of castor oil. He has had patients report that the relief afforded by this medicine had been most unmistakable from its first administration. He prescribes

it in an emulsion, of which each tablespoonful contains from one-half to one drachm of the oil, preferably one-half at first, to be taken either half an hour before meals or an hour after meals. This should be continued for months together, and only intermitted when it seems unmistakably to increase the patient's dyspeptic symptoms.

The nitrate of silver in quarter-grain doses, combined in pill or capsule form with nine grains of turpentine resin, and taken three times a day, is sometimes of much service, although not as uniformly as in chronic catarrhal or ulcerative colitis, in which complaints a quarter of a grain of opium is added. To enable the turpentine to dissolve and not pass the bowels unchanged, it should be pulverized well with licorice powder and a drop or so of liquor potassæ added to each capsule. After the silver has been taken for six weeks, the sulphate of copper in quarter-grain doses can be substituted for it.

Membranous colitis is a complaint particularly characterized by general disturbance of the digestive functions of the whole alimentary tract. This is a result and not, as many deem it, a cause of the colitis; but there can be no doubt that the consequent maldigestion and fermentation of the ingesta become of themselves a complication of the original complaint. The stomach is apt to be dilated, and the small intestine become the seat of disturbed innervation and a perverted secretion. Five grains of resorcin in solution with tincture of nux vomica half an hour after meals constitutes a good prescription for the gastric symptoms, to be supplemented by ten grains of sodium benzoate and ten grains of bismuth salicylate in capsules, an hour after each meal, as intestinal antiseptics. We should, however, from the first bear in mind the probable dependence of the disease itself on chronic constipation, and against this he limits himself to the employment of salines exclusively. From one to two drachms of phosphate of soda with ten grains of salicylate of soda should be given every morning in a tumblerful of water as hot as the patient can sip it. After a time the same quantities of sulphate of magnesia may be substituted. Daily massage of the bowels, particularly of the tract of the colon, is also to be highly recommended. We need not fear arousing any inflammatory process by such manipulation, for we are not dealing with inflammatory disease. Once in a while, however, we do find a region which always remains tender to palpation, and in such cases a local blister often is beneficial.

The diet of such patients is important to consider, if only from the fact that many of them most unwarrantably reduce it from fear of this or that article disagreeing with them, according to their remembrance of some severe attack after they partook of it, until they finally live on only some very few and insufficient forms of food. We may simply exclude beans, corn, spinach, and the woody vegetables, along with oatmeal, among the cereals, and then encourage the patients to eat meat, poultry, eggs, zoolak or kumiss, peptonized milk, and most cereals, with instructions not to care what will happen. In some cases pancreatic emulsion is of marked service.

Finally, bodily movement and out-of-door exercise is beneficial on general principles. Repeatedly, we find a summer change to the country do more good than anything else, for fresh air is the best remedy for constipation that can be named, and its effect is not lost in disease.

Recent writers, notably Hale White, have recommended, whenever everything else fails, to give the colon a prolonged rest by the establishment of an artificial anus in the right flank. Some recoveries have been reported from this procedure, and he sees no reason why in otherwise hopeless cases it should not be tried.

THE TREATMENT OF PTOSIS OF THE LIVER AND THE FLOATING LOBE.

Mr. TREVES, in *The Lancet* of May 12, 1900, concludes an article on this somewhat novel subject by discussing the treatment of this state. The medical management of ptosis of the liver, in his opinion, calls for little comment and consists merely in the treatment of symptoms.

Dyspepsia is relieved by dieting and by drugs, constipation is attended to, a certain amount of rest is insisted upon, and such movements as cause discomfort are discontinued. Prominent among the measures which have been employed in ptosis of the liver are such methods of treatment for the relief of neurasthenia as happen to be in fashion at the time. Some writers have advised galvanism, probably because galvanism, as a therapeutic measure, has long been considered appropriate to obscure or hopeless disorders. It is difficult, however, to understand how any form of the electric current

could cause a wandering liver to return tamely to its place under the ribs. Well-made belts are no doubt of considerable service in the treatment of ptosis of the entire gland; their use is much to be commended. Dr. Graham has given an account of cases relieved by suitable supports.

The treatment by operation may be considered as it has been applied (1) to the floating lobe, and (2) to ptosis of the whole gland.

In the operative treatment of the floating lobe three measures have been carried out: (1) The lobe has been excised; (2) the lobe has been sutured to the anterior abdominal wall; and (3) the distended gall-bladder, with which the condition is often associated, has been treated by cholecystotomy. Resection of the floating lobe has been carried out by Langebuch and Bastianelli, and cases of the suturing of this lobe to the parietes are reported by Billroth, Tscherning, and Langenbuch. In all these cases the patients were females; in all the abnormal lobe was encountered unexpectedly; and in all a cure followed. From one to four sutures were used to secure the lobe. The instances of cholecystotomy performed in cases in which a floating lobe existed are numerous.

The operative treatment of ptosis of the whole organ has consisted in the fixing of the organ in place by means of various schemes of suturing. To these measures the name of "hepatopexy" has been given. The first operation of this kind appears to have been performed by Gérard Marchant in 1891. He fixed the anterior border of the liver to the costal margin by four silk sutures. Langenbuch employed eight silk sutures in the same way. Richelot used catgut sutures. In June, 1895, he secured a prolapsed liver in place by three silk sutures, the median of which took hold of the round ligament. The stitches were passed through the fibrous structures by the side of the xiphoid cartilage. Lannelongue bared the convex surface of the liver over a space measuring six by three centimeters, and then fixed the organ to the anterior abdominal wall by three catgut sutures. Péan established below the liver a "cloisonnément peritoneal horizontal." The abdomen is opened by a transverse incision, and by means of silk and catgut sutures the peritoneum of the anterior abdominal wall is united to that of the posterolateral wall below the replaced liver. Legueu suspends the liver by a double thread which goes entirely through the substance of the gland. Francke fixed the liver to the anterior abdominal wall by eight or nine sutures. No sutures are placed in the region of the gall-bladder. In the gap thus left iodoform gauze is introduced between the liver and the diaphragm and left in the place for eight days. Substantial adhesions are said to be produced by this method. Depage not only fixes the liver by sutures, but he dissects up extensive skin flaps from the front of the abdomen and attempts to reconstruct the abdominal wall. Terrier and Auvray give abstracts of fifteen examples of these operations with eleven cures, two deaths, and two uncertain results. So far as the surgical management of Riedel's lobe is concerned he thinks that the indications for operation do not go beyond the treatment of the distended gall-bladder with which this deformity is often associated. Cholecystotomy has been followed by the complete cure of the patient and the disappearance of the floating lobe.

Treves cannot see that there is any justification for the suturing of the lobe to the abdominal parietes, much less for the wholesale excision of the whole of the protruding part of the gland. It has never been shown that the mere existence of this lobe has *per se* caused any inconvenience or that its mobility has been a source of distress. Any nervous symptoms which coexist are of a kind which would vanish after a simple exploratory incision, and that circumstance probably explains the "cures" which have followed these uncouth measures.

With regard to the cases of complete ptosis, much may be done by carefully applied and substantial support. Such support will probably need to be represented by something more elaborate than a belt. It may be desirable to hold up the relaxed abdominal wall by a thin metal plate taking its bearing from a pelvic band. The cases calling for operation are very few indeed. A ponderous organ like the liver cannot be efficiently supported by a few isolated sutures of silk or catgut. The operation can be needed only in extreme examples, and in these a large nervous element will probably have to be reckoned with. Of the measures advised the most sound would appear to be that carried out by Francke. The sutures should be of silk, and should be passed well into the gland. The incision should be in the right semilunar line when possible. The rest in bed should be for from four to six weeks.

THE PREVENTION OF SCARLET FEVER.

CRANDALL writes in the *Medical News* of June 2, 1900, on this important theme. General inunction of the body is a most effective measure, both of treatment and prophylaxis. It may be begun as soon as the eruption has appeared, and should be continued until desquamation has ceased. The method, however, will vary in different stages. During the stage of eruption, before desquamation has begun, a simple bland oil is most desirable. Antiseptics can be of little avail, and all irritating preparations should be avoided. Lanolin is one of the best of these, or a mixture of equal parts of lanolin and cold cream. These preparations, however, are somewhat expensive. Vaselin, therefore, may be employed in their stead, and is no doubt the most common preparation used. Some of the cheaper grades of yellow vaselin are decidedly irritating to some skins. When itching and irritation of the skin is great, a five-per-cent ointment of boric acid and vaselin is sometimes effective. Sponging with a solution of borax and water, followed by carbolized vaselin, will also give temporary relief. Carbolized vaselin, however, should not be used over large surfaces; it is true that absorption is not active through the healthy skin, but in scarlet fever we do not have a healthy skin, and it seems quite possible that absorption might occur. In a disease in which the kidneys are frequently involved, it is unwise to run any risk of introducing so irritating a substance as carbolic acid.

After desquamation has begun, the objects of inunction are quite different. The procedure then becomes a matter of prevention as well as treatment, and the most important object is to soften and remove the scales, thus preventing their dissemination with the resulting danger of spreading the infection. It is the belief of many that the scales may be disinfected by adding antiseptics to the oily substance used for inunction. This seems somewhat doubtful. It is a point, however, very difficult of decision by clinical observation, and must be settled at some future time by the bacteriologist. The general fact is at least positively settled that proper care of the skin during the stage of desquamation is one of the most effective means of limiting the spread of the disease. Antiseptics may be added to the ointment or oil used for inunction. The boric acid ointment already referred to is one of the best. A two-per-cent ichthyol ointment has its advantages, but is objectionable to many patients because of the odor. Carbolic ointment may be used over limited areas. During this stage the inunction may be preceded by a bath or sponging with water at the temperature of 90° F. The water may be plain, or it may contain a small amount of salt or borax. The use of antiseptic soap is advocated by many practitioners, resorcin soap being, perhaps, the most commonly used.

Ointments or oils of disagreeable odor are objectionable. The appetite is frequently poor, and the problem of nourishment is difficult. It is easy to increase this anorexia by disagreeable odors. A preparation having even a slight odor becomes perceptible when applied to the whole surface of the body. Such odors are often intensified when applied to surfaces not open to the air, particularly when fever or perspiration is present. This is the chief objection to be urged against the animal fats, like lamb fat, mutton tallow, or beef suet. The bacon rind, popular in some parts of the country, has the same objection and possesses no advantages. Lard has but little odor, but it is difficult to obtain it pure in the cities. It is unstable and quickly becomes rancid. Fats are prone to become rancid by being broken up into glycerin and fatty acids. The physician should always make sure as to the character of the preparation used for inunction. A rancid fat in a severe case of scarlet fever may cause great irritation and prolong the period of desquamation.

THE TREATMENT FOR EPITHELIOMA.

According to the *Journal des Praticiens* of May 5, 1900, the following treatment may be carried out in certain cases of epithelioma where it is desired to use arsenous acid:

Arsenous acid, 15 grains;
Alcohol,
Water, of each 2½ ounces.

The ulcerated surface is first cleansed and dried, and after this the mixture that has already been named is applied to the spot by means of absorbent cotton, the surrounding tissues being protected by adhesive strips. On the next day another application is made, and if necessary the arsenical solution is increased in strength gradually from 1 to 150 to 1 to 100, and then to 1 to 80. After these applications, usually by the end of the first day the ulceration is converted into yellow slough, which is very adherent. The applications are continued, and the slough changes

from a yellow to a brown and finally to a black eschar, when it may be detached after a number of days in one piece. It usually comes away readily. One of the objections to this method of treatment is that it is decidedly painful for a number of hours after the first application is made. For this reason Lamotte has suggested the following prescription:

Orthoform,
Arsenous acid, of each 15 grains;
Alcohol and water, 1½ ounces.

By the use of this substance a large amount of the pain can be avoided, in his opinion.

The indications for this treatment are in those patients of advanced age in whom an operation is too grave to be attempted; in cardiac cases which cannot well take anesthetics; in atheromatous patients; and in alcoholic habitués. It is not to be attempted where there is much inflammation of neighboring glands. Indeed, adenopathy may be considered as a contraindication. It is also contraindicated if the cancerous growth is very large, and if the feebleness is marked. This treatment very closely corresponds to the use of the well known pastes which have been before the profession for so many years.

THE TREATMENT OF ACUTE ACNE.

According to the *Journal des Praticiens* of May 5, 1900, inflammation of the sebaceous glands, as illustrated by red papules which are painful and indurated, often appears upon the face and forehead, and sometimes upon the thorax anteriorly and posteriorly. If these papules are persistent they frequently become indurated to such an extent as to produce hard masses in the skin, and then may go on to suppuration, culminating with the discharge of pus in the formation of cicatrices. The treatment depends usually upon the cause of the acne. Some cases of acne are dependent upon the skin being brought into contact with irritant substances like the oil of cade, chrysophanic acid, and pyrogallic acid. These eruptions will usually cease when the irritant application is no longer employed, and the condition of the skin may be improved by applying soothing poultices or hot compresses to hurry their disappearance.

Another form of acne is dependent upon the internal administration of the iodides or bromides. This form is, of course, best cured by stopping the causative drug.

In the so-called spontaneous acne we sometimes find genito-urinary trouble or digestive disturbances. It is necessary for the successful treatment of these cases that a diagnosis as to the cause should be made. Where the digestion is found to be disordered, care should be taken to exclude from the diet list all foods which ferment, notably greasy substances, sauces, spices, and alcoholic drinks. Tea and coffee should also be avoided, as they are apt to produce indigestion, which is a cause. Benzonaphthol, salicylate of bismuth, irrigation of the colon, and the frequent administration of laxatives are advisable in these cases. In some obstinate cases the internal administration of brewers' yeast produces good results.

The local treatment is very important and is both medical and surgical. The medical treatment consists in the cleansing of the skin and in the application of antiseptic substances. Very hot water should be employed rather than tepid, and in obstinate cases, if the skin is not irritated, green soap should be employed to cleanse the skin before the patient goes to bed. The local treatment otherwise consists in the application of lotions, powders, and ointments. In some instances the hot-water applications are sufficient. In others, warm spirit of camphor may be used. In still others, solutions of boric acid or salicylate of sodium in the proportion of 1 to 100, or of ichthyol in the strength of five, ten, or fifteen per cent, may be applied. A useful lotion may be prescribed as follows:

Precipitated sulphur, ¼ ounce;
Spirit of camphor, 2½ drachms;
Water, 8 ounces.

Or, sublimate solution may be used:

Corrosive sublimate, 30 grains;
Alcohol, 1 pint;
Water, 1 pint.

This may be applied by wetting absorbent cotton and applying it to the face. In some instances it should be kept in contact with the face for a number of hours by means of a bandage, and afterwards washed off with pure hot water. In cases where there seems to be a good deal of irritation and inflammation associated with the eruption, zinc ointment is a useful application, or this can be modified by the following prescription:

Oxide of zinc,
Subnitrate of bismuth, of each 2 drachms;
Powdered talc, 3 ounces.

This may be dusted upon the face or mixed with lard and used as an ointment.

When the skin is indurated and the inflammation is chronic, and a stimulating application is required, the following prescription may be used:

Precipitated sulphur, 1 drachm;
Naphthol, 1 drachm;
Resorcin, 1 drachm;
Salicylic acid, 12 grains.

This may be mixed with one or two ounces of vaselin, benzoated lard, lanolin, or cocoa butter.

Surgical treatment of these cases consists in puncturing the pustules by the aid of an antiseptic needle and pressing out their contents. In very obstinate cases it may be necessary to cauterize the suppurative spot by means of a fine galvanocautery point.

A LAXATIVE ELECTUARY FOR CHILDREN.

The *Journal des Praticiens* of May 5, 1900, recommends the following electuary for constipation in children:

Manna, 1 ounce;
Calcined magnesia,
Washed flowers of sulphur, of each 2 ounces;
White honey, 1 ounce.

From a teaspoonful to a tablespoonful of this may be dissolved in a cup of hot milk and given once or twice a day for habitual constipation. A larger dose usually exercises a distinctly purgative effect.

DIGITALIS AND THEOBROMINE AS DIURETICS.

Theobromine may fairly be classed as a marvelous diuretic if we can accept the statement of Barety, of Nice, quoted by HUCHARD in an article in the *Journal des Praticiens* of May 5, 1900. Huchard seems to agree with Barety in this statement, believing that theobromine is an ideal diuretic, and that in doses varying from twenty to thirty grains a day it is capable of surpassing digitalis, which drug aids very materially in increasing the urinary flow. Digitalis is also more slow in its effects than theobromine, and Huchard believes that it acts chiefly by stimulating the renal epithelium.

A MIXTURE OF PARALDEHYDE.

Paraldehyde, 30 grains;
Syrup of raspberry, 6 drachms;
Peppermint water, 6 drachms;
Distilled water, 1 ounce.

This may be taken in twenty-four hours in one or two doses.

TONIC WINE FOR CHRONIC TUBERCULOSIS.

Extract of cinchona, 45 grains;
Tincture of cinnamon, 2 drachms;
Syrup of bitter orange, 1 ounce;
Brandy, 1½ ounces;
Red wine, 3 ounces.

A teaspoonful to a wineglassful of this mixture may be taken once, twice, or thrice a day. —*Journal des Praticiens*, April 28, 1900.

A PILL OF TERPINOL.

Terpinol, 2 grains;
Benzoate of sodium, 2 grains;
Sugar, a sufficient quantity to make one pill.

From one to two of these may be taken in a day.—*Journal des Praticiens*, April 28, 1900.

THE TREATMENT OF ENTEROCOLITIS IN ADULTS.

According to the *Journal des Praticiens* of April 21, 1900, three forms of mucomembranous enteritis may be distinguished—the chronic form, the paroxysmal form, and the febrile form.

In the chronic form we must insist upon the maintenance of a strict diet and combat the constipation by the use of oils, such as one or two teaspoonfuls of castor oil or linseed oil each day. In the place of these, in the way of a laxative we may give the following:

Calcined magnesia,
Washed sulphur,
Cream of tartar, of each 6 drachms.

A teaspoonful of this mixture may be given before each meal. Instead of this the following may be given:

Extract of hydrastis, 15 grains;
Powdered senna leaves, 1 drachm.
Make into twenty pills and take one after meals.

Or,

Podophyllin, 1-10 grain;
Extract of cascara, 2 grains;
Extract of belladonna, 1-6 grain.
One pill each night.

Or,

Podophyllin,
Euonymin, of each 6 grains;
Extract of belladonna, 4 grains;
Extract of hydrastis, 15 grains.
Make into twenty pills and take one or two after the evening meal.

In other instances the constipation is best relieved by rectal injections of glycerin suppositories.

According to Revilloid a bismuth injection made up as follows is useful:

Salicylate of bismuth,
Subnitrate of bismuth, of each 2½ drachms;
Mucilage of quince kernels or sweet almonds, 1 pint.

Where there is diarrhea, nitrate of silver in the strength of two grains to the quart may be injected into the bowel. In still other instances:

Salicylate of sodium, 15 grains;
Bicarbonate of sodium, 15 grains.

One drachm of this may be added to a quart of pure boiled water and injected into the bowel for the purpose of washing it clean.

In other instances large injections of olive oil may be used, and it is claimed that Mathieu uses the following injection with success:

Menthol, 2 grains;
Alcohol, a sufficient quantity to dissolve it;
Simple syrup, 1 ounce;
Water, 3 ounces.

In those cases where there is paroxysmal pain, absolute rest in bed is necessary, with the application of hot compresses to the abdomen and the employment of chloroform internally and hypodermic injections of morphine.

In the febrile cases an absolute milk diet is required, with the administration of gentle saline purgatives and irrigation of the large bowel by copious injections of weak nitrate of silver solution.

HAY FEVER: ITS PREVENTIVE TREATMENT.

The *International Medical Magazine* for June, 1900, contains an article by HOLLOPETER in which he tells us that in his opinion the first step in preventive treatment is a careful study of the nasopharynx. If no extensive lesions exist, such as polypi or hypertrophied turbinated bodies, or very marked deviated septum (Dr. Hollopeter does not regard minor lesions as influencing the treatment), he uses an air-pump—twenty pounds pressure being sufficient—with the return spray, and thoroughly irrigates the nasopharynx, and then, with a continued spray from a hand-ball atomizer, he directs the stream into the nose freely, in both cases using a two-per-cent warm Dobell's solution. Immediately following this sterilization he uses a small applicator, armed with a small quantity of absorbent cotton dipped in a saturated solution of boric acid, and with this he carefully reaches the whole surface of the mucous membrane of the nose and throat. In his little book he says he thoroughly scrubs the mucous membrane. It may be necessary to add that he does not actually scrub the membrane in the sense that one scrubs a hard or resisting substance; what he does, however, is to carefully remove all free secretions and sterilize the surface by gentle mopping. To do this it is necessary to have a delicate touch and to traverse the whole surface of the part. Here, too, come in the advantages of a study of individual cases. The nasal reflexes are in many acutely accentuated, so much so that the slightest impact is responded to so violently that we are likely to "explode" the whole nervous system. The vasomotors are quickly relaxed and unusual distress is likely to follow, manifested by injected conjunctiva, ringing in the ears, sneezing and coughing, perspiration, hot head, irregular heart, chilliness of the surface, and terminating usually with profound languor.

It is needless to say that it requires skill to adjust the touch to the various peculiarities. The author finds the second treatment is never so severe as the first; a type of nervous response is soon established, and it is wonderful to observe how very quickly the membranes become accustomed to this manipulation. He thinks that the relief gained is due to this careful sterilization of the nose and throat, and that not so much value can be attached to the use of any particular solution. He has used bichloride solution (1-to-8000), protargol one-per-cent solution, carbolic acid one-per-cent, suprarenal capsule aqueous solution (six-per-cent), cocaine solution, and so on *ad infinitum*. A saturated solution of boric acid is, he thinks, quite as efficient and less objectionable. An extract made by the following formula is very efficacious and has excellent keeping qualities:

Adrenals, desiccated, 1 drachm;
Boric acid, 16 grains;
Cinnamon water, 4 fluidrachms;
Camphor water (hot), 1 fluidounce;
Distilled water (hot), q. s. ad 2 fluidounces.
Macerate for four hours, then filter.

The surgeon will find this extract a great aid in all minor operations. To insure results a pure suprarenal substance should be used.

Immediately after the use of the spray and the atomizer in the anterior nares, he uses an oily application, a form of paint or varnish which affords a protective covering. This mixture contains as its base liquid petroleum, with camphor, menthol, and oil of

palmetto in solution, and such combination he carefully applies to the whole membrane previously treated. While some of his patients object to this as unnecessary or disagreeable, Dr. Hollopeter states that many assure him that it is most soothing and comforting, and they feel without it as if they were going out with their nasopharynx unduly exposed. Some claim also that the oily application causes sneezing, while others assure him that it prevents this act. After the treatment is completed he suggests that his patients rest a few minutes very quietly in his waiting-room, with the eyes closed, so as to subdue any tendency to reflex disturbance. His treatment is commenced, as a rule, at least one week before the expected onset and continued daily—sometimes twice daily—until ten days after the attack.

This, in brief, is Dr. Hollopeter's local management of the disorder, and he is sure, simple as it appears, it has prompted many sufferers to regularly appeal to him for relief. Despite any objections which may be raised to it, the fact that this method has been successful when all other means have failed has led him to urge it upon the attention of the medical profession.

TREATMENT OF ECLAMPSIA.

In the course of an article in the *International Medical Magazine* for June, 1900, on this topic, J. C. Hirst states that the treatment should be preventive and curative. The preventive treatment consists in keeping a careful watch on the patient's urine, and attention to her general hygienic conditions and surroundings. It is not necessary to go into this latter question in detail, as common sense will show what should and should not be done, always bearing in mind that the woman is not in her normal condition. The urine should be examined every two weeks in the earlier months, and every week in the last month, of pregnancy. If albumin makes its appearance—as it will do in some six or seven per cent of cases—it should not be ignored. The woman should be kept under close observation. She should drink large quantities of water, systematically, and should be put upon some diuretic mixture, such as Basham's. If the albumin increases in amount, and the total quantity of urine voided is decreased, she should be put to bed on an exclusive milk diet, and should receive diuretic mixtures and have her bowels kept freely open by laxatives. This treatment will usually be found sufficient. The occurrence of obscured vision or actual blindness, sudden decrease in the amount of urine, excessive edema, somnolence, or a sudden increase in the amount of albumin, are the indications for the immediate interruption of pregnancy. It is needless to say that in any case in which the urine contains albumin, quantitative tests should be made daily. The Esbach apparatus is the one usually used.

The treatment of the attack itself is radically different. Here promptness of action means everything. Hirst does not go over in detail the list of drugs which have been used, but merely mentions those which have given the best results. Chloral, veratrum viride, chloroform, magnesium sulphate, and normal salt solutions are the agents most used. Heavy doses of morphine have, according to Veit, given excellent results. Ordinarily, the physician, when called to attend a case of eclampsia, has not the time for consideration as to which plan of treatment he had best pursue. It is well to have some settled scheme of action which can be instituted without delay. The following, taken verbatim from Hirst's Text-book of Obstetrics, will give satisfaction in the majority of cases: "During the attack itself, administer chloroform. As soon as the attack has passed off, inject hypodermically fifteen drops of the fluid extract of veratrum viride, and administer by the bowel a drachm of chloral in solution. Place upon the back of the tongue two drops of croton oil, diluted with a little sweet oil. Wring out three or four blankets in very hot water, and envelop the woman's nude body in them, wrapping one around each limb, and covering the trunk with another, and over all pile as many dry blankets or heavy coverings as can be procured. Inject by gravity under the breast or breasts a pint or more of normal salt solution, or, if the necessary apparatus is not at hand, inject several quarts of the solution by gravity into the bowel. If convulsions recur, repeat the veratrum viride in five-drop doses if the pulse is quick and strong. If the face is very congested and swollen, and the pulse still remains full and bounding, venesection should be resorted to, to reduce the tension. Stimulate if necessary, and if the patient can be roused sufficiently to swallow, give concentrated Epsom salts solution in dessertspoonful doses until free catharsis is established."

As a rule, avoid interference with the course of labor until the os is fairly well dilated.

Until then combat the convulsions. If it be then necessary or advisable to hasten delivery, it may be done by the application of forceps. Deep multiple incisions in the cervix, as advised by Duhrssen, are not to be recommended.

Prognosis.—As regards the mother, statistics are reported giving a mortality varying between 3.3 and 25 per cent. The average, the world over, can be put at about 18 to 22 per cent. The mortality for the infant is 50 per cent.

ACUTE SUPPURATIVE OTITIS MEDIA.

In the *Post-Graduate* for June, 1900, PHILLIPS writes that in his opinion the treatment during the attack consists in measures to be resorted to after suppuration has become established. If the discharge has not actually commenced and the tympanic membrane is bulging, a free incision should be made. It requires some experience to properly make this incision, and an incision is preferable to a puncture. Many serious results may be avoided by early incision, at least as soon as pus is present in the tympanum.

For the relief of the excruciating pain during the time previous to discharges, not much can be done aside from applications of heat and narcotics.

After the discharge is established, it is necessary to decide upon the course of treatment to be followed, and in so doing we should not forget that the requirements are cleanliness and free drainage — and cleanliness should refer to the nose as well as to the external ear and auditory canal.

His method of treatment in his clinic is to give the patient some hydrogen peroxide, a little box of sterilized absorbent cotton, a glass dropper, and a small soft-rubber syringe. He also directs that a quantity of sterilized saturated solution of boracic acid should be prepared. He then directs somewhat as follows: Place the head horizontally with the affected ear upward. Fill the auditory canal with hydrogen peroxide; allow this to remain five minutes, after which, with the syringe, use about a pint of the solution, warmed, having a pus basin underneath the ear to catch the return flow. Considerable force should be used with these syringes.

These treatments should be given every two hours by the nurse or mother, and added to it the physician should himself give the treatment in its entirety at least once each twenty-four hours. During the intervals cotton should be placed loosely in the outer ear and changed whenever it becomes soaked with pus.

Another very good plan of treatment, and one preferred by many, is to simply douche the ear every two hours with a solution of mercury bichloride one grain to six ounces, using the entire amount each time. In either case the cleanliness of the canal is carried out.

Phillips mentions one thing that we should not do in the treatment of this disease, and that is blowing the canal full of boric acid. In many of the cases coming to the Manhattan Eye and Ear Hospital they have to spend a great deal of time in removing the impacted masses of boric acid which some well-intentioned person has unwisely blown in. It dams up the discharges, and by so doing one can readily see how much harm it may do. He feels quite convinced that many mastoid complications are the direct result of this method of treatment.

The general or internal treatment may often be commenced during the suppurative period, so soon as the temperature becomes normal. This treatment should be just whatever the general condition of the patient seems to require. Iron, cod-liver oil, iodide of potassium, creosote, and hypophosphites may be mentioned as most helpful medicaments. In many cases Phillips resorts to the administration of freshly made syrup of iodide of iron. These tonics are to be given not only because the general condition of the patient requires such treatment, but because such improvement in turn brings to bear a most helpful influence upon the suppurative process.

In conclusion Phillips says that no physician can successfully care for cases liable to be attended with ear complications, with justice either to himself or to his patient, unless he has the requisite armamentarium and necessary skill to at least make an intelligent examination of the ear, and he should be familiar with the normal anatomical landmarks as well as the diseased condition.

THE USE OF "GAS AND OXYGEN" AS AN ANESTHETIC IN CERTAIN OPHTHALMIC OPERATIONS.

In the London *Lancet* for July, 1900, MCCARDIE writes on this subject, and concludes his article by stating that in his opinion the special advantages of using gas and oxygen in eye work are: (1) The almost absolute

safety of the mixture, which is the safest anesthetic known; (2) the rapid induction of anesthesia, the patient being under in less than two minutes; (3) the induction is without incident and the maintenance in the best cases is quite sleeplike, while full recovery occurs in less than two minutes; (4) the absence of after-effects, the patient being able to leave the room in a very few minutes; (5) the eyeball is fixed, the orbicularis muscle is relaxed, and congestion can be entirely avoided by the allowance of sufficient oxygen, while there is no retching, sickness, cough, straining, or unconscious after-movement causing increased intra-ocular vascular tension; (6) the upright chair or semirecumbent position on a couch can be conveniently and safely assumed; and (7) this method of anesthetization is, for several of the above reasons, admirably adapted for consulting-room work.

If there be any doubts as to the success of the administration it is perhaps well to have an ether inhaler, ready charged, to hand. It is not advisable to give chloroform after the mixture. With regard to limitations in usage it is not judicious to give gas and oxygen to big, strong, or much bearded men, to alcoholics of either sex, or to very young children, especially for delicate operations. In one case it was impossible to give it to an edentulous and restless old woman. In adults especially it is important to keep the patient's head turned to one side to prevent obstruction to respiration, and in some cases the jaw must continuously be pushed forward to keep a free airway. There is the disadvantage to the mixture that in operations immediately followed by pain the patient awakes at once to the sense of it, and it may be necessary to inject morphine. Nevertheless, even if this be so, the absence of such after-effects as retching, vomiting, etc., which so often follow the administration of ether and chloroform, will alone more than compensate for the rapid awakening to pain. Occasionally the operator may find the face-piece in his way, but after a little experience he will probably be but little, if at all, inconvenienced.

After all, the greatest good can be obtained from this or from any other anesthetic by giving it to the most suitable patients, and not by administering it indiscriminately in any or every case. Personally, he has been, on the whole, well pleased with the success attained, especially in the operations for strabismus, and in one on a little child, aged four years. He thinks that these cases show that gas and oxygen may be often used with advantage in certain ophthalmic operations. It does not seem quite fair to the patient, if the operation be of short duration, as is very frequently the case, to subject him to the risks attending the induction and maintenance of anesthesia by chloroform or ether, and to the unpleasant after-effects of these drugs, if such a substitute as gas and oxygen can possibly be employed.

USE OF ERGOT IN OBSTETRIC PRACTICE.

In the *Canadian Practitioner and News* for June, 1900, HASTINGS points out that there is an objection to the use of ergot, and that is, it is a drug over which we have no control after it is administered; in from fifteen to twenty minutes its action begins, and it attains its maximum intensity in about one-half hour, and this lasts for about one and a half hours. As sure as we give ergot so sure will we get tonic contraction of the uterus, so that the whole question of when to use ergot simmers down to this, When is it safe and desirable to have tonic contraction of the uterus? Can we safely give the drug before the birth of the child? Dr. Hastings says he never does, yet some very eminent authorities think it safe, provided the uterus is dilated or dilatable sufficiently to apply the forceps, and we have a normal vertex presentation, and there is positively no obstruction or impediment to deliver other than inertia; but as Barnes puts it, "This postulate is not always easily obtained. Then woe to the mother if any obstacle should delay the passage of the child, and woe to the child if it be not quickly born." We have in quinine a very good substitute for ergot in the second or first stage, as it simply intensifies the natural pains.

For twelve years Hastings has made a routine practice of giving a full dose of ergot immediately after the birth of the child, and leaves a dose for the nurse to give in two hours. For this treatment he is indebted to Cazeaux and Tarnier of Paris, and Paul F. Munde of New York. While the vast majority of recognized authorities recommend it most highly as a preventive of postpartum hemorrhage, yet they advise it not to be given until the uterus is emptied. Now note

the inconsistency of this: they give the ergot after the afterbirth is expelled, and then wait for twenty or thirty minutes for its action; in the meantime the woman may be flooding to death. We must always remember that we must give our drug twenty or thirty minutes before we want its action; we must give it immediately after the child is born, and in fifteen or twenty minutes we will begin to expel the placenta by Crédé's method; and in half an hour, when the drug will have had time to reach its maximum intensity, the uterus ought to be empty.

Hastings's object in this routine treatment is that in securing tonic contraction he prevents postpartum hemorrhage and closes up the channels for septic absorption. He further states that Dr. Lomby Atthill recommends the use of ergot in small doses combined with strychnine for some time before labor in those cases in which there is a history of postpartum hemorrhage, and has had very gratifying results from this form of treatment.

In concluding Hastings says: (1) That the use of ergot is always attended with more or less danger with the fetus *in utero;* (2) that it should be given twenty minutes before we require its action; (3) that it should always be given to secure tonic contraction.

The question will naturally be asked, Why, in the face of all this, do we occasionally have a physician condemn the use of ergot? The only explanation Dr. Hastings can give is that there is probably no other drug of which there are so few reliable preparations as ergot. For years he has limited himself to Squibb's fluid extract and P., D. & Co.'s normal liquid, and "ergot aseptic" (P., D. & Co.) for hypodermic use.

TETANUS AND ITS TREATMENT.

The *Medical News* of June 30, 1900, says editorially that the prime indication for treatment of tetanus is the free admission of air to every part of the wounded tissues. For this reason it is inadvisable to cauterize wounds in which there is fear of tetanus developing. The searing process, by the production of an eschar, effectually occludes the deeper tissues from the pervasive germicidal influence of the oxygen of the air. It is probable that the cauterization produced by the missile itself is an accessory etiologic factor in the original production of tetanus. For reasons similar to those which seem to contraindicate cauterization, strong antiseptics should not be used on a wound that is suspected of being infected with tetanus bacilli. In the spore stage of the bacillus, which is the form in which it usually occurs in the presence of air, the tetanus bacillus is extremely resistant to the action of the chemical germicides. It is futile, therefore, to attempt to destroy entirely the bacilli by such methods. The vital resistance of the tissues is sensibly lowered by their use, and the dying tissue serves rather to protect the bacillus tetanus from the inhibitory influence of the free oxygen of the air.

The serotherapy of tetanus has not fulfilled its early promise, yet there still remain encouraging features in its use. When symptoms of severe tetanus have developed it is practically agreed that antitetanic serum is not of much service, at least when administered hypodermically. As a distinguished authority has said, the initial symptoms of tetanus, as we see them, do not herald the beginning of the disease, but really the beginning of death from the disease. If possible, treatment should anticipate the manifestation of the nervous symptoms of the disease. For this purpose the injection of antitetanic serum as a prophylactic seems advisable in cases in which there is good reason to fear that infection with tetanus bacilli may have taken place. Tetanus serum is now made of such high antitoxic value that the injection of two or three cubic centimeters would be sufficient, in the presence of any suspicious wound, absolutely to guarantee immunity from the disease. The mortality of the disease is so high that prophylactic injection seems justified in all cases in which burns or lacerated wounds occur that have been contaminated by street dirt.

The intracerebral injection of antitetanic serum has not given all the good results that were expected from it. Those who have used this method of treatment most, however, speak very highly of it and will continue its practice in severe cases. Several cases successfully treated by the injection of antitoxic serum through a lumbar puncture have been reported. The serum so injected finds its way into the subarachnoid space, and very probably also into the ventricles of the brain, quite as effectually as if injected intracerebrally. Moreover, a certain amount of the toxins of the disease that are known to exist in the cerebrospinal fluid are evacuated. This method of injection after lumbar

puncture is far simpler than intracerebral injection. The latter is a major operation; the former can scarcely be dignified longer by the name of operation at all.

Cases of tetanus will unfortunately develop this summer as in other years. For these, early lumbar puncture with injection of five to ten cubic centimeters of antitetanic serum should be tried. Where symptoms indicate a severe type of the disease and of a fulminant character, a preliminary injection of a quantity of normal saline solution a little less than the amount of cerebrospinal fluid evacuated would serve to dilute the toxins of the disease and assist in their removal before they are fixed within the nerve cells. This washing out of the spinal canal has been done a number of times, although not, we believe, in tetanus.

For suspicious street wounds, the prophylactic injection of tetanus antitoxin seems not only justified, but demanded as a duty by the present conditions of prophylactic therapeutics.

ALCOHOL IN THE TROPICS.

The *Boston Medical and Surgical Journal* of June 21, 1900, says editorially that a statement recently made by a writer in one of our contemporaries to the effect that the use of alcohol is a physiological requirement in the tropics appears to have attracted considerable attention in the lay press—far more than would seem to be warranted by the circumstances. No fact has been more definitely settled through the efforts of the white race to colonize the tropics than that the use of alcohol, always undesirable, is here a source of positive danger. Medical men of ability and long residence in hot climates are well agreed upon this point. This fact is so well known to the laity that much of the interest attaching to the statement mentioned above—outside of the opposition at once excited among the temperance element—is undoubtedly due to the audacity of the proposition to brush aside the results gained by bitter experience during the past centuries.

The writer above referred to makes little effort to sustain his views by the opinions of others, and it is more than doubtful if he could find scientific support for the attitude taken. He does, however, make the claim that "experience has demonstrated that in a hot climate the moderate use of intoxicating drink is essential to health and efficiency." To this claim we take decided issue.

Beginning with the admirably conducted expedition against the Ashantis in 1873, the British soldier has rarely been allowed the ration of spirits when on campaign in the tropics to which he is entitled on field service in temperate climates. This deprivation was the result of earnest representations on the part of observing officers, both line and medical; and the reports of the medical officers accompanying subsequent expeditions have been uniformly enthusiastic in favor of the substitution of tea for alcoholics. Their reports are, however, expressions of opinion merely, and it is extremely interesting to see how the position assumed by them is fortified by figures. The British army is stationed at points all over the world, in the temperate zone and in the tropics. The medical statistics of the British army are presumably accurate, and the use of alcoholics by the British soldier, as he changes from station to station, is presumably the same. According to the article above referred to, the amount of drunkenness, death, and constant inefficiency in the British army due to the use of alcohol should be greater in the temperate zone than in the tropics. On referring to the British Army Medical Department Report for 1897 it is seen that quite the opposite is the case. The figures given for alcoholism and its results in this report are as follows:

Place.	Year 1897. Ratio per 1000 strength.			Decade 1887-96. Ratio per 1000 strength.		
	Admissions to hospitals.	Deaths.	Constantly non-effective.	Admissions to hospitals.	Deaths.	Constantly non-effective.
England	1.7	.01	.06	2.3	.04	.08
Scotland	1.9	.04	.05	2.8	....	.06
Ireland	1.4	.04	.05	2.0	.02	.06
Canada	3.7	....	.07	3.2	....	.09
South Africa	.4	....	.03	3.0	.03	.08
Gibraltar	8.9	....	.37	5.0	.02	.18
Bermuda	11.2	....	.30	9.1	....	.29
West Indies	15.6	.74	.32	7.8	.08	.19
Mauritius	14.4	....	1.82	20.0	....	1.20
Ceylon	4.5	....	.12	4.8	.08	.17
China	6.4	....	.34	3.2	.15	.16
Straits Settlements	3.0	....	.07	6.2	.08	.27
India	5.2	.03	.22	7.4	.07	.24

On averaging these figures together it is seen that for the five stations in the temperate zone—England, Scotland, Ireland, Canada, and South Africa—the ratio of admissions for alcoholism in 1897 per one thousand strength was 1.18; the death-rate from alcoholism was .018, and the constant ineffectiveness from the same cause was .052. For the stations in hot and tropical climates—Gibraltar, Bermuda, West Indies, Mauri-

tius, Ceylon, China, India, and Straits Settlements — the admission rate for alcoholism during the same year was 8.68 per thousand, and the constant non-efficiency was .445. For the decade 1887–96 the rates per thousand were: For cold climates, 2.64, .016, and .072; for hot climates, 7.93, .06, and .337. These results are extremely interesting, since they show that not only do four times as many British soldiers enter hospitals in the tropics for alcoholism as in temperate climates, but also that the death-rate from alcoholism is more than four times as high in hot climates as in the temperate zone.

Full data as to the relative influence of alcohol in producing inefficiency among United States troops serving in the tropics and at home stations are not as yet available; but the report of the Surgeon-General of the United States Army for 1899, which mentions deaths alone, shows that during the period May, 1898, to June, 1899, inclusive, the death-rate from alcoholism was .14 per thousand among troops serving in the United States and .296 for troops serving in Cuba, Porto Rico, and the islands of the Pacific — or more than twice as large in the tropics as in temperate regions.

If it be objected to that soldiers actually drink less in the tropics, then the above figures for the troops of Great Britain and the United States should obviously be increased to correspond with the deficiency in the alcohol used; if the soldier is said to drink more liquor in the tropics than in a cool climate, the evil results of such drinking are shown by the above figures. In either instance the claim that the use of alcohol is desirable in the tropics is refuted beyond the possibility of discussion. In the light of such figures it is apparent that if the claim above mentioned possesses any value it is merely such as might attach to the personal opinion of a single observer.

It is furthermore to be borne in mind that under conditions of physical discomfort such as must prevail in the tropics, moderation in the use of alcohol is a matter of extreme difficulty. It is easy to conceive that a man temperate in a more northern region might easily fall into habits of extreme intemperance in the tropics, were he permitted to take the first step.

PHYSIOLOGICAL STANDARDIZATION.

The *Philadelphia Medical Journal* of June 23, 1900, says that physiological standardization has been pronounced "valueless." It finds the following statement in a valued contemporary:

"With great labor and care it might be possible to approximately standardize the preparations of a few drugs like strychnine, which have very violent and definite action upon frogs; but with other remedies, such as ergot and digitalis, for which physiologic standardization is especially desired, the process seems to me valueless. The susceptibility not only of different species of animals, but of different individuals of the same species, varies enormously—I should say as much as thirty per cent—and even the same animals seem frequently to vary very distinctly at different times in regard to dosage. Moreover, the accuracy of experimentation required in order to make any semiapproximate test is so great that it can only be done by the most skilled and careful observers, and is so laborious that days of work would be necessary for every sample looked into. In the hurry and push of commercial enterprise, in the secrecy of the work done, in the difficulties of the labor, in the uncertainties of the most scientific investigation of the dosage of drugs, I find so many obstacles that, personally, I think the method entirely unfit for introduction into the Pharmacopœia, and attach little value to any published statements by manufacturers."

It deplores this statement (also the undeserved animadversions upon "commercial" manufacturers) and must question it. It is a matter of relativity. The position taken reminds one of those "antis" who would abolish all decent medical journalism because some advertisements in decent medical journals do not please them. To the "antis" should be left their chosen field of pessimism, "ethical" and dogmatical. "Let us discriminate" when it comes to a sincere ethics, and a genuine medical science. Every clinician would rather have ergot that has been tested on the cock's comb and demonstrated efficacious; would rather have digitalis proved of a certain power by experiment upon the dog; would rather have diphtheria antitoxin shown to possess at least a definite degree of antitoxic value by injection in the guinea-pig, than to have these products untested and of absolutely unknown energies. Is not a somewhat indefinite but still certain relative power better than one utterly unknown? Is not a glass of water known to be relatively pure better than one possibly more impure and perhaps infected? Would

any clinician prefer a tested antitoxin or one untested with which to treat his diphtheritic child? The indiscriminate word "valueless" seems peculiarly unfortunate. What other test than a biological test is possible of a biological product? The mathematic accuracy of physics and chemistry will never be possible with biological products and conditions. To despair of the relative and best obtainable test because it is not absolute is to despair of progress, and lands us in a "valueless" pessimism. Until the millennium (of science) arrives—a long way off, perhaps—should not the Pharmacopœia recognize the relative value of tested biologic products, and, demanding a minimum of proved power, thus condition the fundamentals of progress? Therapeutic nihilism is not a dignifying credo of a therapeutic profession.

THE TREATMENT OF PNEUMONIA.

A lecture of BARR upon this subject is published in the *British Medical Journal* of June 16, 1900. In its course he says that he has no doubt that a moderate bleeding at a very early stage would do good in a sthenic case with a full, bounding pulse and labored respiration. It should never be adopted after the first forty-eight hours, and never at any time if the pulse be small, feeble, and compressible. Pneumonia in the female is often relieved by a commencing menstruation, and an epistaxis is occasionally beneficial. A profuse bleeding from the arm may apparently relieve the patient's distress, but it masks the symptoms, does not shorten the length of the disease, but, on the other hand, often weakens the patient and protracts his illness.

Dr. Albert Robin has recommended small bleedings with a view of increasing metabolism, but his reasoning is faulty and possibly also his observations. He thus thinks that in the advanced stages we may relieve the right side of the heart and lessen pulmonary edema. Now the most edematous lungs Dr. Barr says he has ever seen were in a strong, healthy man, who was stabbed, and died in less than half an hour from hemorrhage. Again, we cannot siphon the blood back from the right side of the heart to the arm, and all such bleeding is in reality depletion of the arterial tree. We cannot relieve the right side of the heart by emptying an unfilled arterial system when the blood cannot get through the lungs.

Dr. Barr has a very favorable opinion of antimony for moderating the violence of the inflammation. It should rarely be continued beyond the third day, and of course in asthenic cases had better be altogether avoided. He seldom gives more than ten minims of antimonial wine every four hours to an adult. It may be combined with liquor ammonii acetatjs and one of the potash salts. If there be much restlessness small doses of opium should be added.

It is most important that the patient should have a fair amount of sleep from the very commencement; there is nothing lessens the patient's chance of recovery so much as the exhaustion of the nervous system from the want of sleep. There is no objection to opium in the early stage, and two or three five-grain doses of Dover's powder during the night often answer admirably. In alcoholic subjects a combination of opium and antimony answers well. Recently Prof. Waymouth Reid and Dr. MacDonald have shown that morphine lessens the nerve impulse traveling along the phrenic nerve; when, therefore, the lung is engorged and the right side of the heart handicapped, he would avoid all preparations of opium. At this stage he prefers chloral hydrate, but if this failed to induce sleep morphine combined with strychnine could be used. If sleep has been obtained in the early stages it is not difficult to induce it in the later. Sleep is absolutely necessary for the patient, and the sooner it is procured the better. A quiet, restful sleep tends to lower the temperature, and on the other hand a high temperature is very inimical to sleep.

If the patient have a comfortable night he will not require much sleep during the day. Barr does not believe in converting the bedroom into a dark chamber, which makes it difficult for the patient to distinguish day from night, and is apt to give him the impression that he is already cast into outer darkness. So long as a strong light or radiant heat from a fire is not playing on the patient, the more bright and cheerful the room the better. The room should be one of the best in the house, and if possible should contain at least 1000 cubic feet for each occupant, and the whole air of the room should be changed three times every hour. Often we find the patient, a nurse, and one or more friends in a small room of about 1000 cubic feet, from which all fresh air is religiously excluded. How can a patient be expected to withstand such slow suffocation for a week? The physician may,

perhaps, order 20 cubic feet of oxygen, which is equivalent to about 100 cubic feet of air, and may thus console himself that he is aerating the patient's blood. The air contains as much oxygen as the patient's blood can take up, and we have not merely to supply oxygen but to get rid of carbonic acid, which is best effected by an abundant supply of fresh air. Of what value is 20 to 60 cubic feet of oxygen compared with 72,000 cubic feet of air. He is pleased to think that the craze for cylinders of oxygen is dying out. There is no difficulty whatever in freely ventilating a room. Feverish patients do not catch cold, so that bugbear may be set to one side. Of course he would not recommend a draught of cold air to be played on the patient, lest it should develop a catarrhal condition or set up rheumatic pains. Night and day a stream of pure air should be admitted without creating draughts. The temperature of the room should be maintained at about 65° F. The ordinary atmosphere at this temperature is not saturated with moisture, and is therefore capable of holding the patient's exhalations, and there is not much risk of him drowning in his own excretions. He has never found the atmosphere in this climate so dry as to require any additional moisture.

Whatever means be adopted in dealing with the temperature of the patient it should be kept within moderate bounds, as high temperature leads to granular degeneration of the heart muscle, sleeplessness, delirium, and nervous exhaustion. It is often sufficient to keep the patient very lightly clothed, and thus allow free escape for the evaporation of the sweat, which thus carries off a large amount of latent heat. All eiderdowns, cotton-wool, waterproofs, and every impervious covering should be avoided. If this be insufficient, cold sponging or the ice-bag should be adopted.

Dr. Barr occasionally uses a warm poultice at a late stage to hasten resolution. If during convalescence the lung resolution be slow a revulsive agent, such as a mustard or fly blister, may be required. In his wards one has frequent opportunities of observing the great advantages which accrue from well-directed respiratory gymnastics.

If the illness begins with nausea or vomiting it is well to wash out the stomach with a few tumblerfuls of hot water; the bowels should be cleared with a brisk calomel purge. In sthenic cases he has referred to the value of antimony, but such cases are the exception rather than the rule. In no case should an acid mixture be given at the commencement. Quinine as an antipyretic agent has been very much overrated, but in hectic temperatures due to mixed infection it is a valuable agent in large doses, and during convalescence it is a good tonic in small doses. When the pulse is feeble and expectoration difficult, a mixture of carbonate of ammonia, citrate or nitrate of potassium, and citrate of caffeine answers admirably. If the pulse tension be very low, the expectoration liquid and profuse or prune-juice in character, a mixture of calcium chloride and perchloride of iron is suitable. If there be a tendency to cardiac failure, the best remedies are strychnine, caffeine, and digitalis. The latter drug has been vaunted as a specific in pneumonia, but he has never found it such, and very rarely prescribes it during the acute stage of the disease. Maragliano has found that digitalin inhibits the growth of a culture of pneumococci, but it would require a good deal of credulity to imagine that any doses administered by the mouth or hypodermically could have any effect on a culture in a hepatized lung. An antidote for the pneumotoxin would be much more valuable than any of the antiseptics. If there be any danger of collapse, with profuse perspiration, atropine should be administered.

If the lung passes into the stage of gray hepatization, with purulent infiltration and profuse expectoration, there is no remedy like terebene or some other of the turpentine series. He has also found it invaluable in cases of abscess and gangrene of the lung. During convalescence tonics are required. The teeth, tongue, mouth, and even nose should be kept clean throughout the illness by some antiseptic wash.

ATROPHIC RHINITIS.

DOUGLASS writes in the *Post-Graduate* for June, 1900, concerning the treatment of this most obstinate condition. He says that the treatment is to be directed first to the alleviation of the symptoms by means of cleanliness, antisepsis, and the use of alkaline, saline, or acid solutions, and, secondly, to the cure of the disease. He discusses (1) treatment of the early cases; (2) the unilateral cases; (3) the ulcerations; (4) those with obstructions in superior or middle meatus; and (5) the remedying of general conditions.

The complete removal of the scabs and

the cleaning of the nares and pharynx constitute an important part of the symptomatic treatment. He again emphasizes the complete and careful removal of the scabs, and this cannot be trusted to the patient at home. The cases should be made to understand that the physician should see them at least every two days, and, better still, daily; that all the scabs can only be removed by cotton dipped in some solution and carefully applied to loosen them. Every nook, furrow, and fold must be carefully searched. A douche containing any medicament does not cleanse the nose of these scabs, and the patients realize this only too well. When told to use the douche in the interim, they must also be cautioned against an overuse of it. Realizing that some scabbing still remains, they douche and redouche themselves until they are veritable douche fiends. Patients will often use the douche six or seven times a day, and, in the vain endeavor to remove all secretions, will increase the strength of the solution until real harm will result. The best results are obtained from the use of an antiseptic and deodorizing solution applied twice daily, followed by the medicament we may choose, and on alternate days these cases should be carefully cleansed at the physician's office. Peroxide of hydrogen used as a spray, with water, 1 to 10 or 1 to 20, seems to soften and loosen the scabs well, and is both an antiseptic and deodorizer. After a complete spraying and a wait of a couple of minutes, this should be washed out with a warm normal saline solution, either used in the nasal syringe or douche bag. This spraying and washing can be repeated until about a quart of water is used.

Besides the use of saline solutions, Douglass has found it useful in many cases, particularly when the odor is very offensive, to resort to a weak solution of the metallic chlorides, using mercury bichloride in the strength of about 1 to 10000. Both of these remedies may be used with salt in the douche, and in these strengths do not act as irritants, but as desirable antiseptic deodorizers and astringents. The method of treatment by acids has recently attracted attention in New York. Solutions of some of the vegetable acids have been used with more or less success. To dislodge the mucus, to act as a deodorizer and a stimulant to the atrophied mucous membrane, the first to be used was trichloracetic acid—in a one-per-cent watery solution. This was given to the patient to use at home, and in the office a two- to five-per-cent solution of the same acid was used in the nasal application. More recently articles have appeared from German sources, claiming excellent results from the use of citric acid in two- to six-per-cent solutions in these cases of atrophic rhinitis. Douglass's own experience with trichloracetic acid has led him to consider it a useful remedy, but less satisfactory on the whole than other methods. With citric acid he has as yet had no experience.

Other deodorizers and antiseptics have been recommended, and the list of applications is almost identical with the list of new pharmaceutical preparations. In other words, everything has been recommended, but one of the two above mentioned methods will suffice for home treatment.

Ichthyol is, after all, a remedy which seems to give the greatest relief when used locally in these cases of atrophic rhinitis.

At a meeting of a section of laryngologists in the Academy of Medicine, New York, last winter, a discussion arose regarding the most useful remedy for the relief of atrophic rhinitis. The consensus of opinion among those who spoke on that occasion was very much in favor of ichthyol in some form or other. Some used it in weak solutions, two to six per cent; some in stronger, twenty-five to fifty per cent; while others preferred the use of ichthyol pure. All agreed that in their experiences it was the most valuable remedy for the relief of the disagreeable symptoms and the best stimulant for the mucous membrane. This coincides with Douglass's personal experience with this remedy. It is his habit to use ichthyol in the treatment of rhinitis in three ways: The first by means of a watery solution of ten- to twenty-per-cent ichthyol applied on a large pledget of cotton, and introduced into the nares upon the atrophied areas. As soon as the nares have been properly cleansed, by any method considered desirable, the pledgets are placed in the nose, and the patient is allowed to sit in the outer office for a period of fifteen to thirty minutes, after which the pledgets are removed, and the oily sprays are used to finish the treatment.

In cases of atrophic rhinitis presenting ulceration, or localities in the nose where pus is particularly persistent, or in areas that are very much atrophied, it is his habit to use ichthyol in full strength, rubbed directly into the parts, particularly if one of these bad places is upon the nasal septum. Ichthyol is used on cotton which is wound on a probe. This is gently rubbed for a period of four or

five minutes into the atrophied mucous membrane.

The third method of using ichthyol is by means of a salve—forty grains of ichthyol and five grains of menthol, added to one ounce of vaselin. This is given to the patient to use at home after cleansing of the nostril, and also each night before retiring. The patient is directed to introduce into the nostril a piece as large as a good-sized bean, and then to snuff it back, when most of the salve will be distributed over the inferior meatus, and will lubricate the nose rather thoroughly during the night, the excess of ichthyol escaping into the postpharynx and acting there as a lubricant.

In selected cases of atrophic rhinitis, where the odor is particularly disagreeable, or the stench intolerable, such as generally arises from some caries or denuded necrotic bone, a rather new remedy seems to work well—ortho-chlor-phenol in solutions with glycerin of the strength of ten to twenty-five per cent. In ten-per-cent solutions it is a very strong stimulant to the nasal mucous membrane. In solutions of twenty-five per cent it is a decided cauterant, the great objection to its use arising from the odor of phenol which it possesses. For this reason it is used only in severe classes of cases which require a strong deodorizer. It is a strong irritant to the mucous membrane, and if used too often or too strong will result in overirritation. It must be used with caution.

THE EARLY TREATMENT OF ACUTE AURAL DISEASE.

In the *Post-Graduate* for June, 1900, Roosa expresses the belief that the principle at the basis of all treatment of acute aural disease is to quickly unload the congested blood-vessels of the ear. When a severe pain in the ear occurs, and by severe pain is meant pain that will not allow the patient to sleep during the ordinary sleeping hours, it will usually be found to depend upon the condition mentioned in this article. There are furuncles in the ear that pain excessively; there is also a form of otalgia dependent on decayed teeth, but in a very large proportion of cases a severe pain in the ear of idiopathic origin depends, as has just been mentioned, on acute catarrhal inflammation of the pharynx, the Eustachian tube, and tympanum. Objectively the symptoms may be very marked, and on the other hand, in the early hours they may not be. Subjectively the pain is scarcely ever wanting, and is of the most agonizing character. There is usually a tender tragus, with a red osseous canal and a line or two of redness in the membrana tympani itself. There may or may not be a very sore throat.

Acute oral disease may occur in the course of tonsillitis or a simple coryza, or it may be a part of the symptoms of grippe, or it may be in the latter or middle stages of measles, or scarlatina, or even in typhoid fever. In the last named disease, however, the pain is not apt to be so severe, although the inflammation may involve the deeper parts, the vestibule and the nerve. This statement is also true of mumps. Dr. Roosa is inclined to think that any inflammation of the tympanum arising in the course of a coryza or tonsillitis is more amenable to treatment than that occurring as a result of general disease such as scarlatina or measles. This statement influences the prognosis, but has nothing to do with the treatment.

When the diagnosis of acute inflammation of the tympanum and Eustachian tube, constituting with the mastoid the middle ear, is made, if it be within a few hours of its origin we may generally hope to subdue it by the free use of hot water. For the sake of those not accustomed to treat aural disease, Dr. Roosa ventures to remark that this hot water should be used by the fountain syringe and not by piston syringes of any kind; the latter are simply useless. What is wanted is a continuous stream of very hot water, say of a temperature between 90° and 100° F., for some minutes. From one pint to one quart of water should be used at each time, and the douching, or the irrigation, as it is now very much termed in the hospitals, should be repeated every fifteen minutes or every half-hour until the pain is subdued. The patients generally like this treatment, although there are exceptions. He thinks exceptions do not often occur in cases of true inflammation of the tympanum, but in those of the auditory canal. Furunculosis does not always tolerate hot water. If it be a very young subject, say under six years of age, this treatment will usually be adequate to subdue the inflammation, or at least the pain.

At this point comes his first contention with some of the modern otologists. If the hot water relieves pain in an infant, even if it must be continued very often for two or three days, he would not incise the membrana tympani unless it bulged so excessively

that a mere nick would be sufficient to give exit to well-defined pus. It is here particularly that paracentesis is not inconsiderable, and when the process has not gone on to suppuration we stand in much danger of making an infected cavity of the tympanum. In young children the drumhead usually ruptures spontaneously within a few hours, or the hot water subdues the pain thoroughly and the inflammation is abated. This spontaneous rupture is often much better than the surgeon's incision. There is no such haste, either in an infant or adult, as is now generally supposed for the performance of paracentesis in acute inflammation of the tympanum. Many a case has been converted into a serious one by an unnecessary incision of the drumhead, an incision which often involves also the bony wall of the canal or tympanum.

Dr. Roosa states that he is perfectly aware of the criticism which his opinions have received for this view that paracentesis is to be avoided rather than encouraged, and that a spontaneous rupture is better than a too early opening with a knife, but he is not at all convinced by anything that his critics have said. He is not in the habit of treating acute inflammations of the ear during the winter and spring. During the last winter he has treated an unusually large number in private practice only, and no cases of mastoid disease or of inflammation of the sinuses have as yet occurred, although he has not found it necessary to perform a paracentesis for several months. In only one case does he believe the process might have been shortened by a surgical opening, which he did not make, but of this he is not sure, and the patient made a thoroughly good recovery —that is to say, the membrana tympani was restored and the hearing became perfect. On the other hand, he continues to see cases where too early and utterly unnecessary paracenteses, in his judgment, have perpetuated the disease, and in some instances have done so much damage that a complete restoration of the ear and hearing power are not to be hoped for.

He says that almost all the cases of mastoiditis that he has seen were not under his care during the early stages of the aural inflammation that caused them. He expects perfect recovery in a case promptly and thoroughly treated by hot water and leeches, without a paracentesis or a subsequent opening of the mastoid.

If the hot water does not subdue the pain in the case of an adult in a very few hours, say four to six, the next step is to apply leeches; these, according to the old and still proper rule, should be put upon the tragus; very seldom are they required on the mastoid. When the disease has reached such a stage that the mastoid is red and tender, and perhaps swelled, a Wildes incision is a much better evacuant than leeches, and he repeats that everything depends in catarrhal inflammation on getting the patient at an early stage. If hot water and leeches do not subdue the pain, it is time enough to think of opening the drumhead. It is very doubtful if that alone will at once subdue it if the leeches have not already done so. Even after the paracentesis it may be necessary to repeat the leeching. During all this treatment the patient should be kept in a warm room and in bed. This is effective treatment of itself. A gargle of very hot water should be frequently used, but opium will not often be necessary if the fountain syringe and the leech are thoroughly applied, and if the bloodletting if necessary be considerable. In cases of children not old enough to gargle, it is well to spray out their nostrils and swab out their throats with Dobell's solution, Seiler's solution, or salt and water. These solutions should be as warm as possible.

The subsequent progress of the case varies with the individual, the cause, and other circumstances. Great care should be exercised to keep the ear in an aseptic condition. This is better done with hot water that has been boiled and reduced to a toleration point in temperature than by any of the medicinal antiseptics, such as bichloride of mercury or boric acid. None of them are necessary. Sterilized hot water is ample. As the patient gets about the room, inflation by Politzer's method should be practiced. There are no directions about the diet or the general management that would not occur to every physician with any experience; but a young gentleman with a great belief in coal-tar drugs is a dangerous man in a room with an acute otitis. No medicine will be necessarily needed from the beginning to the end of this disease, and antipyretics and opium unnecessarily used will often do harm. Very fortunately for the patient an acute otitis is such a serious matter, involving a part so rich in sensitive nerves, that usually opium in any of its forms will scarcely disguise the pain. The old antiphlogistic methods must be adopted. As Roosa has said in the be-

ginning, most of our cases of mastoid disease, cerebral abscesses, affections of the sinuses, are the result of neglected or improperly treated acute aural disease. He who will follow the treatment above indicated will not have any of them resulting in his cases, but he will have the felicity of seeing them perfectly restored.

Very young infants waking in the night with earache may be often quieted by breathing frequently in the ear. A prominent surgeon in England once gave him almost public thanks in one of the crowded clinics in London for this suggestion, which is in his text-book, and which he said had been of much value in the care of his own infant.

NOTES ON THE TREATMENT OF CHRONIC GOUT.

The *British Medical Journal* of June 9, 1900, contains an article by BAIN in which he says that there is an excess of uric acid in the blood of gouty subjects, and biurate is deposited in their tissues. It is probable that the excretion of uric acid is slightly less in gouty than in healthy subjects, and that there is a marked nitrogen retention, which cannot be accounted for by the slight diminutions in the excretion of uric acid. Upon these, the only known facts regarding the chemical pathology of gout, a number of theories have been constructed. The most plausible is that gout is due to defective elimination by the kidneys, which, owing to some functional or organic derangement, are unable to excrete the whole of the uric acid formed, so that a portion is retained and accumulates in the blood and tissues. It would be more in agreement with clinical experience if the advocates of this hypothesis were to regard the retention as periodic rather than continuous. While this theory is a useful guide to treatment, many facts tend to show that uric acid is not the predominant factor in the causation of gout. The safest course is to regard gout as an expression of perverted metabolism; in other words, the outcome of excessive formation or periodic retention in the organism of one or more of the intermediary or end products of nutrition.

Since uric acid at least plays an important incidental part in the pathology of gout, it is necessary to allude to its supposed antecedents and place of formation. There are three ways in which it is supposed to be produced:

1. By the liver conjugating the ammonium salts and lactic acid.

2. By the kidney synthetizing urea and glycine.

3. By the decomposition of nuclein.

There is very little evidence in favor of the theory of the formation of uric acid by the kidney. Its supporters relied to a large extent upon the fact that hitherto uric acid has not been found in the blood of normal mammals; but as the methods employed for separating uric acid from blood are unreliable, this argument is scarcely valid. They have further argued that the fact of various observers having failed to detect uric acid in bird's blood lent considerable support to their hypothesis, but Dr. Chalmers Watson has recently demonstrated its presence in the blood of different birds. Schroeder maintains that uric acid cannot be formed in the kidney. He extirpated the kidneys in hens and snakes, the hens surviving the operation from six to twenty-four hours, and the snakes from five to ten days, and in both cases he demonstrated an excessive accumulation of uric acid in the tissues. The researches of Minkowski, on the other hand, show that in birds the greater portion of the uric acid is formed by the liver. He removed the livers of geese, and observed that whereas in normal geese the uric acid formed from sixty to seventy per cent of the total waste nitrogen, in those experimented with the proportion fell to from three to six per cent. The waste nitrogen in these birds appeared as ammonia, and was accompanied by a large quantity of lactic acid sufficient to render the urine strongly acid. The experimental results in regard to mammals are not sufficiently conclusive as to the organ chiefly concerned in the production of uric acid.

The evidence as to the genesis of uric acid from nuclein or nucleo-proteid since Horbaczewski's classical researches has been gradually accumulating, and, although contradictory, points to the fact that nuclein is the mother substance of uric acid and alloxur bases; and as there are grounds for supposing that one or more of the bases may be a factor in the production of gout, their origin must have an important bearing on the dietetics of gout.

In treating chronic gout our aim should be to prevent the formation of abnormal proteid decomposition substances, and the accumulation of these and other waste products in the system; and to promote their elimination.

Unfortunately, there is considerable di-

versity of opinion concerning the most suitable articles of diet for gouty subjects. While Dr. Bain does not believe in any hard-and-fast rules for all cases, there is one which should not be forgotten, namely, moderation. In certain cases this and that may be forbidden, but until the total quantity is restricted no progress is made. In the gouty the very greatest importance should be attached to digestive troubles, and the diet should be carefully adjusted to the capabilities of the patient's digestive power. Gout being in all probability due to some error in metabolism, it is essential that any disorder of the alimentary tract and its adnexa should be met by appropriate medicinal and dietetic treatment. The amount of exercise the patient habitually takes must be considered when determining the diet. As it has been shown that a diet consisting largely of peas and beans is capable of producing more alloxur bodies than one composed almost wholly of animal food, gouty patients should be advised to partake sparingly of leguminous food, and foods rich in nuclein. Those who advocate a purely vegetarian diet in gout do not take a sufficiently broad and comprehensive view of its pathology and treatment. Proteids, whether they be of vegetable or animal origin, are absolutely necessary, and the essential point is to give the kind of proteid most easily digested, and just that amount which will be digested with probable certainty in the normal time. Carbohydrates have no influence on the uric acid excretion, but their liability to produce acid fermentation and to retard proteid digestion is to be remembered. Fats should be curtailed, as they are prone to produce indigestion. A mixed diet is the most desirable, providing the digestion admits of it. If regular action of the bowels cannot be obtained without artificial means, drugs having a cholagogue action should be used.

Regarding the deleterious influence of alcoholic beverages there is absolute unanimity; but the rationale of this pernicious effect is still conjectural. Although it is advisable as a rule for gouty patients to abstain from alcohol, there are a certain number of cases, chiefly of the asthenic type, where it is necessary to order a stimulant with one or more meals. The alcoholic beverages which are the least injurious are probably well-matured whiskey and good, sound claret, but individual idiosyncrasy has to be considered. Chittenden, Cameron, and Levison found that a moderate quantity decidedly increased the excretion of uric acid. Dr. Bain's own experimental observations do not support that statement. During one series of observations whiskey and port wine were tried, and on another occasion claret and port, without any effect on the uric acid output.

Exercise out-of-doors is of undoubted value in chronic gout, and during inclement weather indoor exercise is not to be despised. Levison's assertion that the uric acid excretion is markedly increased by exercise requires modification. If a man of sedentary habits takes a moderate amount of exercise the excretion of uric acid is increased for the first day or two, but if the exercise be continued daily the increase is not maintained. The stimulating effect of regulated exercise upon metabolism is an agent of considerable power in preventing the various manifestations of gout.

If the retention theory be accepted, our object should be to diminish the production of uric acid in order to relieve the kidneys. It seems very inconsistent for some of the supporters of this theory to advocate the use of sodium salicylate in gout, a drug which undoubtedly increases the excretion of uric acid both in health and in gout. Various theories have been propounded to explain this increase. Lecorché, Haig, and a number of other observers say that the drug eliminates from the blood and tissues the excess of sodium urate. If this explanation be correct, there must be an excess of urates circulating in the blood of healthy people, and that cannot be admitted. Further, the P_2O_5 and alloxur base should not show a corresponding increase if this view were correct, but as a matter of fact they are also increased. Luff thinks the drug increases the uric acid by transforming glycine into salicyluric acid, and that this in its turn combines with urea to form uric acid; therefore he disapproves of its use in gout. Dr. Bain has grounds for believing that it increases the uric acid at the expense of the leucocytes and other tissue cells, and if there is evidence of renal disease the drug should not be given. Of course, this assumption is based on the supposition that the kidneys, when organically deranged, are unable to eliminate the whole of the uric acid formed in the body. Some think that so long as the excretion of urine is increased the patient must benefit, but though the increase may be beneficial, it may not. Pilocarpine increases the uric acid excretion, but no one, so far as he knows, advises its administration in gout. It is true that sodium sal-

icylate relieves the joint pains in gout—how we do not know—but as it increases the formation of uric acid we ought to consider whether its advantages outweigh its disadvantages before recommending it.

Colchicum does not seem to have an invariable effect on the excretion of uric acid, yet few doubt its beneficial action in acute gout, and it is also useful in some cases of chronic gout.

The Harrogate Old Sulphur Spring diminishes the excretion of uric acid, and this diminution is not due to retention, as evidenced by the increase in the leucocytes and the gradual rise to the original level after cessation of the waters. Whether this is the explanation of the salutary effect in chronic gout, or whether it is owing to its cholagogue action, Bain is not prepared to say, although he is inclined to think that it is due to its influence in accelerating hepatic metabolism. When given in conjunction with the massage douche, gouty patients experience considerable relief from their troubles. Doubtless there are some who may attribute the improvement to the douching with hot water and massage; but, having prescribed the sulphur water without baths or other adjuvants, Dr. Bain can testify to its beneficial influence in such cases. It may be remarked here that if the same routine form of treatment be meted out to all cases of chronic gout, disappointments are certain to occur—in gout the individual should be considered just as much as the ailment.

Potassium iodide is a drug of peculiar value in chronic gout. It appears to retard the development of cardiovascular and renal changes, and in cases associated with albuminuria there is a diminution in the amount of albumin during its administration. Although it has no influence on the solvency of biurate, it is useful in reducing the inflammatory thickening around enlarged joints. It should be given cautiously, as some patients are very susceptible to it, and it is contraindicated in advanced renal cases.

Quinine is supposed to diminish the excretion of uric acid, but in an experimental investigation Dr. Bain found slight increase. Apart from any influence it may possess on the nitrogen excretion, it is an exceedingly useful tonic.

It is rather remarkable that Sir W. Roberts in his articles on gout does not mention guaiacum in connection with the treatment of this disease, though years ago Sir Alfred Garrod expressed a decided opinion regarding its prophylactic power, and other observers have since then testified to its efficacy in preventing acute paroxysms. It is not an uncommon experience to meet with patients who periodically take guaiacum on their own account with the happiest results so far as their arthritic attacks are concerned. As an eliminator of uric acid there is probably no drug to equal it. Guaiac resin should be taken in compressed form, in doses of twenty grains twice a day for about a fortnight. After an interval it may be repeated if necessary. It is not advisable to continue its administration uninterruptedly for a prolonged period.

A good deal of misconception has existed concerning the part played by alkalies in the treatment of gout. That they are of considerable value in the gastric and hepatic complications of gout must be admitted, but that they have any particular influence on the gouty diathesis, or that they increase the excretion of uric acid or the solvency of biurate, must be denied. They may possibly have some indirect effect on gouty processes by their action on metabolism, but this is difficult or impossible to prove by experimental investigation. These remarks refer to alkalies in general, and not to particular alkaline salts. It was believed for some time the alkalinity of the blood was markedly diminished in gout, and alkalies were given in order to correct this, but we now know that the alkalinity of the blood is either normal or slightly increased. Hence the treatment of gout by alkalies is practically restricted to disorders of the alimentary tract. The deductions Sir William Roberts and Dr. Luff drew from their experiments regarding the alleged superiority of potassium over sodium salts in gout cannot be accepted without clinical corroboration. These deductions are based on the supposition that the administration of alkaline salts will alter the alkalinity of the blood, and therefore, that the sodium salts will hasten the conversion of the so-called quadriurate into the gelatinous or crystalline biurate. Dr. Bain has used the words "so-called quadriurate" advisedly, because it has not yet been proved that uric acid exists in the blood in this unstable form. It is possible that uric acid may enter into combination with some other constituent of the blood than the alkaline salts. On a dozen occasions Dr. Bain has prepared the sodium quadriurate according to Roberts's instructions, and no two samples reacted alike with

his standard solution at the body temperature —in some the precipitation occurred in a few minutes, in others it varied from a quarter of an hour to an hour; therefore, experiments performed with such an unstable compound must be more or less unsatisfactory.

One of the most characteristic properties possessed by the blood is its uniformity of composition, and in no particular is this more marked than in the maintenance of its normal alkalinity. Sir Michael Foster states that the alkalinity cannot be increased by the administration of alkalies. If a large quantity of alkali is given to animals it is quickly excreted from the kidneys. Until it has been demonstrated that the alkalinity can be increased by medicinal doses of alkaline salts, it would be safer, so far as particular salts are concerned, to be guided by clinical experience, and it appears to Dr. Bain that the following sentence by Sir William Roberts supports that contention: "I have repeatedly administered the bicarbonate and citrate of potash continuously for three or four years, and in sufficient doses to maintain the urine persistently alkaline, yet I have seen the arthritic attacks recur with unabated vigor."

Regarding biurate solvents Dr. Bain does not know of any one superior to pure water, therefore he strongly approves of gouty patients taking a moderately large quantity of water between meals. Dr. Tunnicliffe found from laboratory experiments that tartrate of piperidine had a marked solvent effect on sodium biurate, but Dr. Bain does not think it has been shown clinically to exhibit this effect.

In ascertaining the efficacy of a supposed biurate solvent it should be given both to a healthy and to a gouty individual, while on a fixed diet. If it has no effect on the uric acid in the healthy, but increases the excretion of uric acid in the other case, Dr. Bain thinks we are justified in assuming that the drug either eliminates the excess of urates in the blood or increases the solvency of biurate, and subsequently effects its elimination.

A CASE OF HAT-PIN IN THE URETHRA.

BROWN (*New York Medical Journal*, July 7, 1900) reports a case of a Pole who on finding himself unable to urinate passed a lady's hat-pin, head first, into his urethra. It slipped from his grasp, and he was unable to get hold of it. He later succeeded in passing his water, but suffered nearly constant pain. On examination the pin could be felt in the urethra behind the peno-scrotal junction. An incision was made in the scrotum over the point of the pin, the point grasped by forceps, and the pin removed. The wound was closed by silkworm-gut sutures, catching and approximating the walls of the urethra, but not perforating them. He made a complete and uninterrupted recovery.

Two similar cases have been reported—one by Hawley in the *British Medical Journal* of March 17, 1900, and the other by Bonnet in the *Province Médicale* of April 21.

A CASE OF VESICAL HERNIA IN A CHILD.

ADAMS (*Clinical Review*, July, 1900) reports the case of a male child aged eighteen months who presented what appeared to be a right-sided inguinal hernia. Operation was decided upon, and the different layers of tissue were successively divided until the cut, which should have exposed the sac, instead of doing so opened a cavity from which urine escaped. Further examination showed that the hernia consisted entirely of a finger-shaped diverticulum of the bladder with exceedingly thin walls. The bladder was firmly adherent to the cord — no peritoneal covering could be recognized. The vesical diverticulum was cut away, the opening into the bladder closed by continuous suture, and the bladder replaced within the ring. The internal ring and upper part of the canal were closed by sutures, and then the wound closed with drainage. The child made an uninterrupted recovery.

Fenger has reported two cases of femoral and two of inguinal hernia in which the bladder formed part or all of the hernia.

NOTES ON PROSTATECTOMY.

THORNDIKE (*American Medical Quarterly*, April, 1900) states that it was not until 1889 that the surgical world awoke to the possibility of attempting anything like a radical operation for the removal of obstructing prostatic masses. The present situation of the treatment of prostatics is the palliation of the condition by catheter as long as the patient can be kept comfortable by this means; and then attempts to alter the existing condition of obstruction by various operative procedures; the removal of one or both testicles; the ligation of one or both vasa deferentia; the removal of parts of the pros-

tatic growth by incision, enucleation, or electric heat; or finally, by a complete enucleation of the prostatic growth by the suprapubic or perineal route, or both combined. The catheter is very valuable in the early stages and is generally used; the operations other than complete prostatectomy have a limited application in individual cases. The radical operations in use to-day are the suprapubic operation of McGill and the perineal operations of Nicoll and Alexander.

Fuller has modified McGill's operation by adding drainage through the perineum, which is the operation of choice. The technique consists in opening the bladder above the pubes, the mucous membrane covering the projecting portions of the prostate is cut through, and the growths enucleated with the finger. The wound is drained through the perineum after opening the membranous portion of the urethra.

The technique of Alexander's operation consists in opening the bladder over the pubes, then placing the patient in the lithotomy position, with a grooved staff passed into the bladder through the urethra. The membranous urethra is then opened by a median incision from just behind the bulb back to the apex of the prostate. The staff is then withdrawn, two fingers of the left hand are passed into the bladder through the suprapubic wound, and these serve to press the prostate downward into the perineal wound. The enucleation is done with the forefinger of the right hand through the perineal opening.

In Nicoll's operation the prostatic growth is enucleated through the perineum without opening the urethra. The combined suprapubic and perineal incisions are made as in Alexander's operation, and in neither one does the enucleation injure the mucous membrane of the bladder. The mortality of prostatectomy is from fifteen to twenty per cent, and with a possibility of relief from catheter life for about three patients out of four of those who survive the operation.

The chief points in favor of the Alexander operation are that the entire prostate is thoroughly and entirely removed by enucleation; the mucous membrane of the bladder and prostatic urethra is uninjured, and the danger from septic absorption is thereby lessened; hemorrhage is reduced to a minimum; the most efficient and thorough drainage is secured.

All surgeons realize the utility of the catheter, and at the same time realize also its wide-spread abuse, seeing patients pass through months of invalidism and pain, with the catheter as a very impotent instrument of palliation for a condition which ends in surgical kidneys and death. The surgeons have two present duties: First, to teach the general medical public the limitations of catheter treatment and the necessity for letting the surgeon be his own judge as to the proper time for interference, as well as to judge of the technical character of the interference; to teach them that prostatics should be made comfortable and kept so by a radical operation early in the disease, if other means fail or cannot be properly instituted. Secondly, to teach themselves the possibilities which these new operations are opening up, and to give themselves an experience which will justify them, as it most certainly is going to do, in offering a radical operation to persons so early in the progress of the disease that renal complications will be as rare a cause of death as shock, hemorrhage, and sepsis are already coming to be.

FRACTURES OF THE METATARSUS IN THE INFANTRY.

MARÉ (*Archives de Médecine et de Pharmacie Militaire*, June, 1900) reports eleven cases which occurred in a battalion of 500 infantrymen. Kirchner, after an experience with forty-four cases, has concluded that the second metatarsus is the bone more often broken; more rarely it is the third, very rarely the fourth, and exceptionally rare the fifth. Stechow observed thirty-six cases, which comprised nineteen fractures of the second metatarsus and fourteen of the third. In the author's eleven cases the third metatarsus was fractured six times, the second four times, and the fourth once. The diagnosis is not always easy, as crepitus and the other cardinal signs of fracture are difficult to elicit. The two most reliable symptoms are a fixed point of pain, and swelling. Whenever possible the diagnosis should be confirmed by the radiograph. Absolute rest in bed and massage constitute the only treatment, which should be continued until the patient can bear his weight upon his feet without undue pain.

In conclusion it may be said that fractures of the metatarsus are relatively frequent in soldiers, especially in those who have recently joined the service. The second or third metatarsus is the one more easily frac-

tured. Edema of the dorsal region of the foot and the existence of a fixed point of pain indicate fracture; the appearance of callus in two or three weeks confirms the diagnosis. Rest in bed and massage until the disappearance of pain on pressure over the callus constitute the treatment.

FISTULA IN ANO: ITS RELATION TO PHTHISIS.

GANT (*Medical Record*, July 7, 1900) states that fistula is more common than any other disease found about the anal region. Out of 16,060 cases of rectal disease treated in St. Mark's Hospital, London, 8497, or more than fifty per cent, were treated for fistula in ano. Of these 5829 were males and 2668 females, or about the usual percentage as regards the sex. Of fistulæ in tuberculous subjects there are two kinds—one a true tuberculous fistula resulting from localized deposits, and the other, those cases made difficult to cure because of the lowered vitality resulting from the coincident phthisis.

The symptoms and general characteristics of tuberculous fistulæ are so different from those of the ordinary kind that it is not a difficult matter, if one is careful, to differentiate between them, as will be noticed from the following comparison:

Non-tuberculous.	*Tuberculous.*
1. Internal and external openings small and round, the edges red, and situated in the center of an elevation.	External and internal openings large and triangular, edges of a bluish tint and drooping into the opening.
2. Buttocks rounded and supported by fat.	Skin undermined.
3. Hair about the buttocks normal.	Abundant, long, and silky.
4. Nails normal.	Nails clubbed.
5. Face and ears and nose normal.	Face pinched, nostrils wide open, ears large and sticking out prominently from the head.
6. Voice natural.	Voice husky.
7. Complexion ruddy.	Complexion sallow.
8. Rarely loss of flesh.	Loss of flesh considerable and rapid.
9. Discharge slight and yellow.	Profuse, whitish in color, and watery.
10. Introduction of probe causes considerable pain.	Introduction of probe causes slight pain.
11. Appetite normal.	Appetite poor.
12. Digestion good.	Digestion bad.
13. Sleep natural.	Interrupted and occasionally disturbed by night sweats.
14. Discharge contains principally colon bacilli.	Discharge contains tubercle bacilli.
15. Not accompanied by hemoptysis or cough.	Frequently complicated by hemorrhage of the lungs and annoying cough.
16. Tight sphincter.	Patulous anus.

The treatment depends entirely upon the condition of the patient, and operation should always be performed if the patient's condition will permit. In non-operable cases the patients should be made comfortable and their general condition improved by keeping the fistulous openings free, thus encouraging drainage; assist healing and relieve pain by copious injections, or the application of caustics, stimulating, antiseptic, and soothing remedies; entice the appetite and supply palatable foods known to have nourishing qualities; stop all medication which disturbs the stomach and irritates the intestine; administer oils, creosote, and other medicines which tend to improve the patient's general condition.

Do not keep these patients in bed in a dark room; on the contrary, allow them the fresh air, sunshine, and the sea breeze or proper altitude when near the ocean or mountains. To relieve pain and induce sleep, medication should be given by mouth or hypodermic injection.

In operable cases the patients should have their general health improved as much as possible before undertaking the operation. If possible the operation should be performed under local anesthesia; if not, chloroform is a better general anesthetic than ether, as it renders the patient unconscious in a shorter time; patients recover from it more quickly, there is less subsequent vomiting, thus obviating strain at the anus and possible hemorrhage, and it is not so irritating to the lungs and kidneys.

The operation of ligation is especially adapted to the treatment of tuberculous fistula as well as the simple variety complicated by phthisis, since it does not deprive such patients of the benefits of air, sunshine, and exercise, and causes but slight pain.

In conclusion it may be said that tuberculous fistula of the anus is usually secondary to tuberculous disease of the lungs. Pulmonary phthisis is rarely, if ever, secondary to fistula in ano, either before or after operation. Tuberculosis of the anal region should be dealt with radically, as is recommended when it attacks other parts. When the patient's general condition will permit we should operate on all fistulæ irrespective of the kind. We should not refuse to operate on persons suffering from a mild form of phthisis, nor on those who give a family history of tuberculosis. Certainly, if we arrest one destructive process, nature is all the more capable of dealing with the other. It would seem that those patients operated

upon for tuberculous fistula and those that are non-tuberculous complicated by phthisis, who rapidly decline and die, do so as the result of an inflammation of the lungs induced by the anesthetic, especially ether. Such accidents have not followed any of the operations which the author has made under local anesthesia.

TREATMENT OF CANCER OF THE CERVIX OF THE UTERUS COMPLICATED BY PREGNANCY.

JOHNSTON (*American Medical Quarterly*, April, 1900) states that these cases may be divided into three groups, each having its own indications for treatment:

1. Those cases in which the cancer appears before the termination of the fourth month of pregnancy and remains limited to the cervix. The treatment is exactly the same as if the pregnancy did not exist. Hysterectomy should be promptly performed, preferably by the vaginal route.

2. Those cases in which the disease is discovered after the fourth month and remains limited to the cervix. In this class of cases it may be possible to save the lives of both mother and child, and the course of treatment should consist in making frequent examinations. If the disease progresses so rapidly that it is evident that it will advance to an inoperable stage before the period of viability, the possibility of saving both lives no longer exists, and that of the child must be sacrificed. In this class of cases the uterus should be extirpated by the abdominal route. If, on the other hand, the disease progresses but slowly, so that it is evident that the cause of the mother will not suffer by a few weeks' delay, postponement should be recommended. Operation should if possible be postponed to the seventh month or later, and the Cæsarian section be performed, followed by complete removal of the uterus, which may result in rescue of the child and at the same time accomplish for the mother all that could have been hoped for from an earlier operation.

3. Those cases in which, regardless of the stage of pregnancy, the disease has extended to the vagina, and possibly neighboring structures, rendering the condition inoperable. The treatment consists in sustaining the mother's strength until term, or at least until the child has reached a viable age. If the woman can be carried to term, the delivery by the natural channel is so fraught with danger that Cæsarian section should always be resorted to as less dangerous. Should delivery before term be unavoidable, Cæsarian section should be performed where there is the slightest chance of securing a viable child, and it is also the only method to be adopted prior to such time, if it be apparent that the passage of even an undeveloped fetal head through the diseased cervix would end in fatal hemorrhage or poisoned wound of the peritoneum.

SPLENECTOMY FOR CONGESTIVE HYPERTROPHY.

BOVEE (*Annals of Surgery*, June, 1900) states that he has before reported two cases of splenectomy. One operation was for the relief of a large leucocythemic spleen, and the patient died on the table; the other case was one of enlarged movable spleen associated with tubercular peritonitis and splenitis. In this instance the operation was successfully completed, and the patient was alive several months later, though it was believed that she was suffering from pulmonary tuberculosis. The principal reason usually for removal of the spleen is its enlargement, and this produces marked distress according to its size, the number and character of adhesions, and the interference with the functions of other organs. The sense of intolerable dragging when the tumor is large often demands removal, provided other conditions permit it. This enlargement is usually due to paludal, tubercular, or idiopathic causes, malignant disease, wandering of the organ, axial rotation, echinococcus and other cysts, chronic congestion, amyloid disease, and injuries, such as rupture. Perhaps the most frequent cause of enlargement of the organ —leucocythemia—is the one condition in which the operation of extirpation should almost never be performed. More than one hundred cases of splenectomy for leucocythemia have been reported, and in but three of them was it successful. Such results should be sufficient to put this indication for operation practically beyond dispute. In the author's third case the spleen was tremendously enlarged as the result of congestive hypertrophy. Splenectomy was performed and the patient made an uninterrupted recovery. It is well known that the changes subsequent to operation vary according to the relative normal condition of the organ removed. These storms of fever, high pulse-rate, and other manifestations of marked

trophic and psychologic disturbances are often furious in the adult, and in the child or young animal practically absent. In the case of the much-altered spleen, such changes in the vicarious functionating economy have begun long before operation, and thus leave less to be done in that direction after splenectomy. It is probably for that reason that extirpation is not followed by the critical conditions incident to the sudden taxing of the compensating organs following removal of the normal spleen for rupture, torsion of the pedicle, and other conditions.

Splenectomy for malignant disease has not yet been satisfactory. This is due to the disease spreading from the spleen very early, and therefore rapidly appearing in other structures, only to cause an early death. For echinococcus and other cysts the operation is very successful, as it has been for rupture of the organ. During the past two years twenty cases have been operated for rupture, and but two of them died. One of these fatal ones was severely mangled, and had a rupture of the liver as well as of the spleen.

Splenopexy has been recommended and practiced abroad for movable or wandering spleen when the organ was less than three times its normal size. The principle of the operation is to form an extraperitoneal pocket by slitting the peritoneum, placing the spleen behind it after separating it sufficiently, and then suturing the flaps over it. It need not be of necessity in the normal region of the spleen. It would seem that this is an unwise procedure, as there is danger of sloughing of the flaps after the separation, and of marked dragging and consequent injury from such suspension of a mass of tissues weighing over twenty-one ounces.

RADICAL TREATMENT FOR CURVATURE OF THE PENIS.

FULLER (*Annals of Surgery*, June, 1900) states that anything which robs the corpus spongiosum of its natural elasticity, so that it fails to lengthen, as do the corpora cavernosa during erection, will cause curvature, and the amount of the curvature will correspond to the loss in the elasticity. Acute inflammations involving the periurethral tissues temporarily produce this deformity, and any inflammation or traumatism which leaves a permanent cicatrix in the corpus spongiosum will serve to render it lasting. The danger of causing chronic curvature is a chief objection to internal urethrotomy. Most curvatures are not sufficient to act as a bar to sexual intercourse, and as many of them slowly tend to improve or to become tolerable, nothing in the way of radical treatment is usually demanded or advisable.

The author reports one case in which the curvature was so great as to prevent sexual intercourse. It followed an internal urethrotomy performed for the relief of a stricture of the anterior urethra. The operation consisted in opening the perineum from just above the rectum to the scrotum. The urethra was then cut across very obliquely in the bulbous region. The penile end, in order to facilitate its retraction, was dissected free from the surrounding tissues for about three-quarters of an inch, after which the penis was pulled up and bent back over the pubes. In that position of the penis a maximum amount of separation of the cut urethral ends occurred. Then, while maintaining the penis in that position, the penile end of the urethral roof was carefully stitched with fine catgut to its surrounding tissues, while a longitudinal half-inch cut was made along its floor. The urethral roof of the posterior end required no stitching, as it had not been dissected free from its surrounding tissues. This done, a perineal vesical drainage-tube was inserted, after which the author's usual urethral tube was adjusted and the perineal incision carefully closed by suture. The penis was left bent back over the pubes, and secured in that position by transverse strips of plaster. The wound healed well, and the operation was a distinct success.

The young man, now nearly two years afterward, has a good free stream on urination, and a penis which is nearly straight during erection. The sexual act can be accomplished without any difficulty, and his bar to matrimony is consequently removed.

THYROID MEDICATION IN THE TREATMENT OF DELAYED UNION OF FRACTURES.

MURRAY (*Annals of Surgery*, June, 1900) states that the changes in the growing skeleton due to the loss of function of the thyroid gland may be summed up as an arrest, in a high degree, of the growth of the bones in length; a material delay in the ossification of the epiphysial cartilages and synchondroses; and, finally, the presence for an abnormal length of time of a bony plate at the site of the former epiphysial cartilage. There are

nineteen reported cases of delayed union in which thyroid extract has been employed, of which thirteen are reported as successful and six as failures.

Before deciding to use the thyroid one should consider the cause of non-union in the individual case, whether it is due to some constitutional condition which may be corrected by appropriate medication, or whether there may be some local cause which can be removed only by operation. In the absence of such causes, the thyroid treatment is indicated, and should be resorted to in preference to resorting to any of the numerous operations which have been devised to effect union. The treatment should be started with small doses, as serious symptoms may follow too large a dose. Tablets or capsules, each containing two grains of the thyroid extract, are sufficient to start with, then gradually increasing the amount every few days, and watching carefully for any unpleasant symptoms. Overdosing may produce an effect opposite to that which is desired, as it has been observed in cases of infantile myxedema that in the presence of too large doses, while the bones steadily increase in size, they still remain soft. It should not be forgotten that the heart and kidneys should be carefully examined before resorting to this form of medication, as it is contraindicated when these organs are diseased.

From the results in these cases thus far reported, and from the fact that under medical supervision the thyroid therapy is not dangerous, we are justified in recommending the trial of thyroid treatment before proceeding to operative measures.

TENDON TRANSPLANTATION IN THE TREATMENT OF DEFORMITIES OF THE HAND.

TOWNSEND (*Medical News*, July 14, 1900), after reviewing minutely the results in the seventeen reported cases he has been able to find, states that many cases of drop-wrist following cerebrospinal meningitis may be markedly relieved by this operation. The necessity for careful and thorough examination as to the condition of the various muscles prior to operation is a matter of considerable importance. We should ascertain whether they react to faradism, and whether the reaction of degeneration is present or not. To get good results with restoration of function, it is advisable to suture only tendons that have power left—that is, if we expect these tendons to do any active work in the future. Of course, the tendon to which they are sutured is usually a paralyzed one, and the method of action is that the non-paralyzed shall do the work of the paralyzed one. Careful study of the various movements produced by the action of the muscles will tell us which tendons to transplant and to which they can be best attached. In addition, there is no reason why muscles should not be made to do work for which they were never intended, and by certain arrangements so fastened that their usual line of action shall differ from the normal. In rare instances a paralyzed muscle might be transplanted, the idea being simply to use it to hold the hand or fingers in a better position without any expectation of restoration of function. Asepsis, of course, is very necessary, and if we have union *per primam* there should be no adhesions to interfere with the movements of the muscles. To close up thoroughly the tendon sheaths is very difficult and probably unnecessary. Several small incisions are better than extensive dissections.

Various suture materials have been used with success, the best probably being silk, which is easier to use, more liable to hold, and less liable to be absorbed. The hand should be kept in a hyperextended position for at least six weeks, and the motions should be begun gradually, and accompanied by massage and electricity.

TREATMENT OF TUBERCULOSIS OF THE KIDNEY.

TUFFIER (*Journal des Praticiens*, June 9, 1900) states that he has performed nine lumbar nephrectomies for tuberculosis of the kidney, with a complete recovery in every case. In seven cases he performed nephrotomy, with the result that two recovered, two died, and the remaining three had fistulæ. The diagnosis should cover two important points —the recognition of the affection and also the exact determination of the condition of the kidney of the opposite side. The diagnosis is not always easy, for the seat of the tuberculosis may be in the parenchyma of the organ, or there may be an obliteration of the ureter of the affected side. Again, in those cases accompanied by profuse hematuria, it may be impossible to find the bacillus. The most difficult part of the diagnosis is in determining the condition of the kidney of the

opposite side. Although the catheterization of the ureters is a well recognized procedure and aid to diagnosis, still at the same time the operation is not without danger, and in one case caused the death of the patient. It should only be resorted to in cases of absolute necessity.

Each case must be a law unto itself in regard to the indications for operation. In all cases, where possible, lumbar nephrectomy is the operation of choice. Nephrotomy should be reserved for those grave cases of pyonephrosis with marked fever and cachexia, and in which a long operation would only increase the chances of death. The nephrectomy may if necessary be done at some other time. The ultimate results of these operations are very encouraging. The ureteral canal should always be carefully explored at the time of operation. Frequently it will be found obliterated in spots, and in others it will be ulcerated, these two forms sometimes coinciding in the same case. In all cases in which it is found dilated there is usually an incomplete obstruction in the lower part. This is best reached by a lumbar incision. If the ureter is atrophied it is best to apply the actual cautery and follow by a few catgut sutures. The operations for the treatment of renal tuberculosis give brilliant, durable results, and are a distinct step forward in the therapeutics of this disease.

SUBPHRENIC ABSCESS FOLLOWING APPENDICITIS.

BALDWIN (*Medical News*, July 14, 1900) reports two cases, both of which recovered after operation. The author has been able to find only forty-five reported cases, which includes his own two. Pathological examination has shown that these abscesses may be either intraperitoneal or extraperitoneal, the position of the appendix determining which variety will be found in any particular case. The diagnosis must be based upon the continuance of the symptoms of infection either after the removal of the appendix or after the subsidence of the inflammatory symptoms in the region of the appendix. Among the symptoms that have been noted are: tenderness in the region of the liver, depression of the lower border of the liver as the result of the accumulation of pus and exudate between its upper surface and the diaphragm, pain in the right shoulder, and hiccough. Pleurisy may become a complication as the result of direct extension. The abscess may contain gas as well as pus, either as a result of the escape of gas from the perforation of some hollow viscus, or due to the presence in the abscess itself of gas-producing bacteria.

The differential diagnosis is aided by the following points: (1) The previous history pointing to abdominal rather than thoracic trouble. (2) Normal vesicular murmur and normal fremitus at the apex with a sharp line of differentiation from the amphoric respiration found below. On deep inspiration the line of normal fremitus descends to where the amphoric breathing has been previously noticed. (3) Very slight displacement of the cardiac apex. (4) Slight bulging of the intercostal spaces and no chest-wall immobility.

The mortality without operative interference is very large, recovery occurring in a little over five per cent of these cases. Under proper surgical treatment the mortality should not exceed fifty per cent. The best treatment is to make an incision well back on the right side, so as to strike the abscess directly, if extraperitoneal, or through adhesions, if time has permitted their formation. If no adhesions are found, this incision will best allow drainage with protection of the general cavity by gauze.

ACUTE INFANTILE INTUSSUSCEPTION.

BELL (*Edinburgh Medical Journal*, July, 1900) states that fifty-three per cent of all the cases of acute intestinal obstruction in children under ten years of age are due to intussusception, and that its mortality is seventy per cent. It may be divided into the following anatomical varieties; the percentage of occurrence in the various parts is given with each class: (1) Enteric (thirty per cent): includes intussusception of the small bowel as far as the ileocæcal valve. (2) Ileocæcal or ileocolic (fifty-two per cent): includes all intussusceptions involving the ileocæcal valve, whether the valve be the apex of the invagination (ileocæcal) or the ileum be projected through the valve (ileocolic). (3) Colic (eighteen per cent): includes pure intussusception of the colon or rectum. Two or more of these varieties may be present in any one case. The cause is unknown, the most widely accepted view being that the condition is brought about by irregular peristalsis.

The symptoms vary in severity, but are fairly uniform in their occurrence. Pain, paroxysmal in nature, is the first symptom, and is most severe when the accident first

happens; later there is but slight pain even on moving the patient. Obstruction is usually total, although at first slight movements may be passed. The passage of blood and mucus is an almost conclusive symptom, taken in conjunction with the other prominent signs; it occurs early and increases during the first twenty-four hours, after which it rapidly subsides. Tenesmus is always present. Vomiting generally occurs in the first twelve hours, but it is not severe as long as the stomach is kept empty. In protracted cases, stercoraceous vomiting may occur, and hiccough be most distressing. A "sausage-shaped" tumor may be felt at the right of the invagination on careful examination. The general condition of the patient is most typical; from being apparently well he suddenly complains of pain; this passes off and he becomes very restless, with an anxious expression. The temperature as a rule is normal or subnormal, except where there is serious complication. After the first few hours the pulse becomes small and rapid, the general condition worse, and unless relieved in the first three days death occurs.

The treatment should be by immediate laparotomy, the incision being made directly over the tumor. The intussusception should be quickly reduced by bimanual manipulation. The wound should then be closed in the ordinary manner without drainage. If the operation has been performed in the first twenty-four hours the child should receive nothing but a little hot water and brandy by the mouth in sips for ten or twelve hours after the operation. After this time has elapsed without vomiting he should have two drachms of warm milk and barley-water in equal parts every half-hour for three hours, and then one ounce of the same or albumin water hourly for the next nine hours. This should be gradually increased up to a reasonable diet, but anything of a semisolid nature should be withheld for a week. The author reports three cases operated on, two of which died.

RELATIVE VALUE OF VAGINAL AND ABDOMINAL OPERATIONS IN EXTIRPATION OF THE PELVIC ORGANS.

RICHELOT (*Annals of Gynecology and Pediatry*, July, 1900), after considering in detail the operations proposed for the relief of fibromata, cancer of the uterus, and pelvic suppuration, reaches the following conclusions:

1. In uterine fibromas the two methods, abdominal and vaginal, have an equal value; each one has its indications, but the upper route is the most often indicated, and vaginal hysterectomy can no longer, to-day, claim the same superiority as formerly.

2. In cancer of the uterus vaginal hysterectomy is superior to every other method; it permits us to obtain, in a proportion of not less than ten per cent, prolonged survival, and even cures which seem to be final. The best operation is that which precedes cancerous infiltration, and not that which pretends to pursue it through the pelvic cavity. Abdominal hysterectomy is an extra resource in a very limited number of cases, but applied deliberately to invading cancers it is an imprudence, and for limited cancers it is an illusion.

3. In pelvic suppurations the conduct to be used is variable and responds to complex indications; improvements of technique have given a great value to the suprapubic method, which ought to be preferred in certain cases. But most frequently, when the surgeon is sure of his diagnosis, if he wishes to give his patient the greatest security and the least suffering, vaginal hysterectomy is the method of election.

TUMOR OF THE BLADDER; EXTIRPATION; RECOVERY.

DELAGRAMMATICA (*La Grèce Médicale*, June, 1900) reports the case of a man aged forty-one who for the five and one-half years previous to operation had hematuria, which had been the only symptom. Sixteen months before the operation he had been unable to urinate as the result of his bladder becoming full of clots of blood, so he was catheterized, with the result of infecting the bladder and causing a violent cystitis. The bladder was exposed by a suprapubic incision, the tumors cut off, and hemorrhage prevented by the use of the actual cautery. Drainage was secured by introducing a Périer-Guyon tube through the incision, and a de Pezzer sound through the urethra. The patient made an uninterrupted recovery.

TWO PERFORATIONS OF THE INTESTINE; RECOVERY AFTER LAPAROTOMY.

PERRIOL (*Archives de Médecine et de Pharmacie Militaires*, July, 1900) reports the case of a soldier who was kicked in the abdomen by a horse. He presented the usual symp-

toms of perforation. The operation was performed four hours after the accident. On opening the peritoneal cavity blood, bile, and fecal matter flowed out. Two perforations were found in the small intestine; these were closed by Lembert sutures, and the operation completed by inserting a gauze drain. The patient made an uninterrupted recovery.

A CASE OF PRIMARY CARCINOMA OF VERMIFORM APPENDIX.

ROLLESTON (*Lancet*, July 7, 1900) reports one case in which the appendix was the site of a primary spheroidal-celled carcinoma. The appendix was removed in the usual way, but since then she has become cachectic, and evidently secondary growths are developing in the abdomen. Microscopical examination showed that the growth was not extensive in the mucous coat, that it could be traced outward into the muscular coat, and that there was no growth on the outside of the peritoneum; showing that the growth originated in the mucous membrane of the appendix, and that it was not a secondary growth either implanted on the peritoneum or arising as a result of embolism within its substance. Primary malignant disease of the appendix is very rare, and when it does exist it only presents the symptoms of ordinary appendicitis, the diagnosis being made histologically.

Reviews.

A MANUAL OF CLINICAL DIAGNOSIS BY MEANS OF MICROSCOPIC AND CHEMICAL METHODS. By Charles E. Simon, M.D. Third Edition, Thoroughly Revised and Copiously Illustrated.
Philadelphia and New York: Lea Brothers & Co., 1900.

This is the third edition of Dr. Simon's well known book upon Clinical Diagnosis, the first edition of which appeared four years ago. It contains a large number of colored plates and a still larger number of the black and white illustrations. At the time of its appearance we prophesied that it would be a successful work simply because it puts into the hands of the physician a clear and concise description of the methods which should be employed by the practitioner in the diagnosis of more or less obscure conditions. While it is true that the tendency of the profession has been during the last few years to resort to laboratory methods of diagnosis, and to a certain extent to repudiate the older bedside methods of diagnosis, it is also a fact that a book such as Dr. Simon's is badly needed, since the only other work of a similar character is the well known and celebrated translation of the Clinical Diagnosis of von Jaksch. While doubtless some laboratory investigators will be inclined to differ with Dr. Simon in regard to some of the opinions which he expresses, we believe that this third edition can be cordially recommended as one of the best, if not the best, books of its kind for practical purposes.

DUANE'S MEDICAL DICTIONARY. By Alexander Duane, M.D. Third Edition.
Philadelphia and New York: Lea Brothers & Co., 1900.

To-day, when the number of good medical dictionaries has very greatly increased, it certainly is an indication of usefulness when in the space of a few years such a volume reaches its third edition. The chief reason for the success of Dr. Duane's work depends upon his grasp of the needs of practitioners and medical students, upon the concise way in which the information in his dictionary is given, and upon the scholarly manner in which the author has performed a difficult task. The present edition differs from its predecessor in that he has broadened its scope so that it now includes the terms used in pharmacy, dentistry, and veterinary medicine, and he has also taken the opportunity to rule out obsolete and useless words. The result is that the dictionary is a condensed, easily handled, and easily referred to work, and we bespeak for it the continued success which it deserves.

Correspondence.

LONDON LETTER.

BY RAYMOND CRAWFURD, M.A., M.D. OXON., M.R.C.P. LOND.

The medical schools and medical societies are once more enjoying the yearly period of repose earned by a twelvemonth of activity. The medical atmosphere is still mainly charged with South African affairs. The public has been compelled perforce to see the obverse of the medal, and the obverse is less terrible than the public would fain imagine. You are no doubt aware that for some months past the profession has been pluming itself not a little on the success of its efforts at the seat of war. You will also recall the fortuitous utterance of Mr. Treves

on returning from the front "on the plague of women and the plague of flies," in which he awarded the palm of pestilence to the former. Now, however, the women have turned again and sought to rend the whole profession by way of atonement for the acrimony of the one. Their mouthpiece has been carefully selected in the person of a prominent member of Parliament who took part in the society picnic to South Africa, and who has recently graced the columns of the *Times* with a word-picture of the neglect and inhumanity he observed in the field hospitals. Parliament has perforce appointed a Commission of Enquiry, and sufficient evidence is already to hand to form a pretty accurate judgment of the whole case. I am assured by a prominent medical officer from the front that these "female ministering angels" bitterly resented the inhumanity that withheld their dole of buns from patients, suffering mostly from enteric. On the whole, and considering the character of the country and of the campaign, there is a general agreement among those that were present that except in a few exceptional cases the amount of preventable suffering was very slight. Such as did occur seems to have been entirely due to the exigencies and difficulties of transport, and in no way to the medical service. Under existing conditions this is inevitable, and probably the only solution of the difficulty lies in providing a transport for the medical equipment, quite independent of the general transport, and not liable to be sacrificed to it on an emergency. To the casual observer the conflict of evidence among those who saw the same conditions, and who are all presumably actuated by a desire to tell the whole truth, must seem not the least amazing part of the whole imbroglio. It reminds one by what careful training alone a faculty of correct observation can be acquired, and with what difficulty, even when facts have been correctly observed, these same facts are set forth in language that cultivates accuracy to the exclusion of picturesque excess. One cannot, however, shut one's eyes to the pitiable mortality from enteric fever. As might reasonably be expected the disease has assumed epidemic form, not when the troops are on the march leaving the sources of infection daily behind them, but as soon as the masses of men have become aggregated into camps. Here again, however, much must be laid to the charge of the military operations. At Bloemfontein, for instance, it was impossible for the medical men to foresee that the main waterworks would fall into the enemy's hands, but it is true that the accident found them unprepared with adequate means of water sterilization and of camp sanitation. Here, however, we come back again to the old question of transport.

In previous letters I have called attention to such statistics as we have to hand on the subject of antityphoid inoculation. Some six months ago I laid before you the very favorable statistics provided by Professor Wright from his Indian experience, and in recent letters I have referred to the disparaging criticisms that have found their way home from Cape Colony. We now have before us the official figures of the results obtained by antityphoid inoculation in the beleaguered garrison at Ladysmith. Due allowance must of course be made for the comparatively small number of cases dealt with in the statistical record, and also for the fact that the conditions working for the severity of the disease and its unfavorable event were far in excess of the normal. The table is as follows:

	Number under observation.	Number of cases of enteric.	Proportion in which attacks stand to total number of men in group.	Number of deaths from enteric.	Proportion in which deaths stand to total number of men in group.	Proportion in which deaths stand to total number of attacks in group.
Not inoculated	10,529	1489	1 in 7.07	329	1 in 32	1 in 4.52
Inoculated	1,705	35	1 in 48.70	8	1 in 213	1 in 4.40

According to these statistics it will be seen at a glance that the incidence of the disease was enormously decreased by inoculation, while the case mortality was apparently not affected. Enthusiasts assert that much was catalogued as typhoid that could not strictly be brought into that category, and that if due allowance were made for this the incidence would have been very much less. With regard to the case mortality, it should of course be borne in mind that the facilities for treatment were practically non-existent: doctors and nurses were far too few to cope with the number of cases, fresh milk was not to be had, and water-baths were an unknown luxury. The one and only factor making for recovery was abundant fresh air.

Fresh air seems at last to be obtaining the recognition that nature ordained for it as a therapeutic agent. In the recent epidemic of influenza in London one of the consumption hospitals took pains to observe the results of treatment of influenza cases in the open-air

wards, and to compare them with the results of treatment in the same institution in warm bedrooms. The temperature in the open-air wards ranged from 37° to 47°, all the windows and ventilators being kept open day and night. Their observations pointed to a lessened range of fever, a much shorter duration of fever, and greater freedom from complications.

A very interesting and successful meeting of the British Medical Association is just terminating at Ipswich. Fortunately the temperature has so far moderated itself that we have not had a repetition of last year's *fiasco*, when papers of first-rate importance were read to empty benches. The Addresses in Medicine and Surgery will be published in the *Journal*, and both are well worth reading, whether you prefer the cultivated grace of Dr. Pye Smith on medicine as a science and medicine as an art, or the more trenchant address of that most practical of surgeons, Mr. Treves. Many of the discussions were of considerable interest, and I will so far as possible summarize some of the most imporant. Dr. Judson Bury, of Manchester, spoke suggestively on the effects of influenza on the nervous system. He recognized two chief groupings of the nervous effects, those occurring during the pyrexial stage and taking on a delirious or comatose type, and the familiar postpyrexial sequels of the neurasthenic type. He referred to this latter group the occasional mental and paralytic cases of influenzal origin. It is important, however, to distinguish between mental and paralytic states that are due to influenza, and those that are merely brought into evidence by influenza. All the nervous effects were referable either to a general toxemia or to secondary structural lesions caused by the influenza bacillus, either alone or in cooperation with other organisms. Microscopic evidence of structural change in brain, spinal cord, and peripheral nerves was adduced. Dr. Buzzard drew attention to the complexity and mixed nature of the lesions produced by influenza, instancing the coexistence of symptoms of spastic paraplegia and peripheral neuritis. Sir William Broadbent gave valuable observations of several cases of the comatose type occurring in his own practice; he was disposed to refer these cases directly to the action of bacilli, perhaps by choking the meningeal capillaries, while other cases were indubitably of toxemic origin. Newton Pitt, however, considered that the meningitis was not proximately due to the influenza bacillus, but to the activity of pyogenic organisms for which the influenza bacillus merely paved the way; in these cases he had found other organisms in the meninges, but not the influenza bacillus. Prof. Clifford Allbutt spoke of the unfavorable prognosis of mental disorders of influenzal origin, and was of opinion that the stress of the toxemia fell mainly on the anterior part of the brain, while Sir Peter Eade fancied that the poison had a special affinity for the medulla, and a preference for sensory over motor nervous structures.

The subject of oral sepsis has attracted a good deal of attention of late at our societies and in our medical journals. A substantial contribution to the study of the subject was Godlee's paper to the Royal Medical and Chirurgical Society. Bradford, too, has spoken of it as a probable antecedent condition of acute leucemia, and Hunter has referred pernicious anemia to infection of the digestive tract, the mouth in turn being often the prime offender in inducing an infective state, through neglected conditions of denta caries and other septic states. In a recent paper Hunter suggests that many other general diseases of septic character, such as infective endocarditis, empyemata, meningitis, and osteomyelitis, may have a similar origin. From this point of view he urges the necessity of much closer attention to oral antisepsis by the routine removal of all carious stumps, or failing this regular and energetic applications of strong antiseptics to the focus of decay, and by far more careful antiseptic care in the matter of tooth-plates and the like. The obvious corollary of these propositions is that the proper treatment of any general septic condition traceable to dental sepsis consists in the employment of an antistreptococcic serum. This plan of treatment is said to have been already successfully employed in at least one case of pernicious anemia.

PARIS LETTER.

By R. H. Turner, M.D. (Paris).

There has existed of late years in France an association called the "Association des Femmes de France," to be of service in time of war. This association has got up an exhibit at the Exposition and one of the small steamers of the Seine was chosen as a means of carrying out the plan. The object in

view in choosing a boat was to show the advantages that might be derived therefrom in case of war. The most noticeable features about the disposition of the boat were the following: the use of a sort of tent on the bridge, under which the patients can be placed when their condition is not too precarious; the use of springs in the hanging of hammocks, which prevents any jarring; a floor covered with linoleum and therefore easily washed. This boat is not supposed to be an example of a hospital ship; it is really more for the transportation of the wounded. It is certainly a very advantageous way, as it avoids a good deal of the noise and jolting to which most wounded are subjected.

The treatment of phlebitis has been the subject of conversation in the hospitals in Paris recently on account of a new method advocated by Dr. Dagron, a former interne of the Paris hospitals, and a well known specialist in massage. This treatment consists in massage to prevent ulterior stiffness and loss of power due to prolonged immobilization. Instead of following out the routine treatment of keeping the patient in bed for a long time, Dr. Dagron, in his recent article in the *Presse Médicale*, spoke highly of massage after the first general symptoms were over. During the first week, or rather as long as general symptoms of infection exist, nothing should be done but watch the case and insure perfect immobilization on both sides. Two days after all general symptoms have disappeared, and the edema begins to go down, one can start the mobilization. These movements should be undertaken by the physician, and should be progressively tried from the feet upwards. The toes are flexed and extended, each one is made to describe different movements, the tarsus and the metatarsus are brought into play. Great care should be taken not to flex the thigh upon the pelvis, however. As much as possible no pain should be caused by these movements. The following days the patient herself can undertake these movements without following out any special order, but during the second week no flexion of the thigh should be allowed, and the patient must not sit up in bed. During the second week an experienced anatomist should be able to map out the dangerous as well as the safe zones and exercise a little gentle massage. Still it is preferable to wait until the third week before beginning the massage. At this period the education of the new nervous circulation can begin. The patient can have her legs hang outside the bed; they will of course get congested and edematous. A few days later she can be placed on an inclined plane and lifted up to an angle of 45°, then perfectly upright. During the fourth week some passive movements of flexion of the thigh are carried out, the patient is allowed to make a few steps, the latter being absolutely equal on both sides. No sticks or crutches should be allowed. A certain amount of redness and edema may appear, but will vanish after rest in bed. As for the sitting position, with the help of a number of cushions, the angle of flexion may be varied progressively. After this has been carried out, the patient may be told to continue the treatment by herself. This treatment would seem to have given very good results to Dr. Dagron.

At the International Congress held in Moscow in 1897 it was decided to hold an international congress of the medical press in Paris in 1900 in connection with the medical congress. This took place on the 25th, 27th, and 28th of July of 1900. Two sections were established, one concerning the technical side of journalism, and the other on the deontology of the medical press. Such questions as the usefulness of an international association of the medical press, and copyright laws, were discussed. Exchanges between journals, the use of pseudonyms, gratuitous insertions, the use of an international decimal system, were brought up also.

It has always been a moot question to know whether syphilis was of American origin, or whether it was of European origin. Dr. Zambaco Pacha, who has become quite an authority on such subjects as leprosy, Morvan's disease, and kindred affections, presented some photographs of bones that had been found in Upper Egypt, and dating from 80 centuries back. These bones showed indications of suppurative osteitis, enlargement of the femurs, tibias, and fibulæ. The disposition of the lesions is such that Professor Lannelongue admitted that they seemed to be of syphilitic origin. This would prove that syphilis has existed in Europe from the first ages. Dr. Fournier examined the photographs and declared that there was no sure sign that the lesions were of syphilitic origin. The simple examination of a bone is not sufficient to demonstrate the existence of syphilis. The common varicose ulcer sometimes causes hyperostosed tibias which are similar to those caused by syphilis; the same can be said of typhoid fever. Dr. Zambaco

insisted on the large number of lesions seen, but Dr. Fournier said that tuberculosis could sometimes produce similar results.

At a recent meeting of the Medical Society of Berlin, Dr. Stern described two cases of poisoning by naphthol β used externally. The first case was that of a girl nineteen years old, who had been given for the itch an ointment containing 50 grains of naphthol. Vomiting, malaise, and lastly the loss of consciousness came on. Petechiæ formed on the limbs, the urine became bloody, and the patient died after two days. Naphthol β was found in the urine, and the kidneys and liver were found to be affected with turbid tumefaction of the cells. In the second case the patient was fifty-six years old, and had used an ointment containing 15 per cent of naphthol. Three hours afterward there was agitation, hallucinations, and extreme frequency of the pulse. The skin was thoroughly cleansed, and the patient regained his usual condition. His urine had become olive green.

An article has been published in the *Presse Médicale* on the treatment of typhoid fever by the use of hot baths. It has been said by Variot and Netter, the specialists in children's diseases, that it was better to use warm or tepid baths with children. With adults the cold bath is the best method that can be used in the majority of cases, but in some cases it is found advisable to use hot baths. Dr. Bosc, of Montpellier, has been trying this method in certain forms of typhoid fever. According to Dr. Bosc there would exist two indications for the use of hot baths—cases where the condition of the heart is such as to necessitate their use, and then again forms of typhoid fever with a hemorrhagic tendency, especially when there exists hemorrhagic nephritis with headache, nausea, vomiting, showing that there is a uremic complication.

With a child the principal indications are complications of the respiratory organs. This can be easily understood, since we know that with children the hot bath has a very energetic and rapid effect, especially on the pulmonary congestion. In adults the respiration is accelerated, but remains easy and regular, and more oxygen is taken in. Another fact that should be observed is that the blood being drawn away from the viscera and nervous system, the heart will be able to exert its action much more easily, and the kidneys and liver will be more easily affected and the destruction of the toxins and effete material will take place much more effectively. The heart will therefore be more easily affected, as the toxins being more readily eliminated, the nervous system will be toned up. As to the action of the warm bath on the kidneys, it produces diuresis much more readily than any other method. When there is renal congestion, and especially nephritis, cold baths are contraindicated, and tepid baths are not so good as warm baths. Once the urine has become more abundant, it will continue to be excreted in relatively large quantities. On the other hand a warm bath has a most calming effect on the nervous system, and perspiration is increased. Warm baths can therefore be said to be indicated in hypertoxic cases, uremic forms, where there are signs of heart failure, and where the liver or kidneys are affected.

The thirteenth International Medical Congress was inaugurated on the second of August in the Salle des Fêtes on the Champ de Mars. This very large hall is built inside the Palais des Machines, as it is called, and the speeches could only be heard by a very few of the persons present. President Loubet was to have presided, but on account of the assassination of the king of Italy he abstained from coming, and Professor Lannelongue made the first speech. His speech was frequently applauded, and was more or less a species of panegyric of science. Science was the great educator, and at the beginning of this new century, new horizons had been disclosed which would lead to a clearer understanding of the best means of ameliorating the condition of the human race. Another salient point in Dr. Lannelongue's discourse was the way in which he insisted on the futility and ill results of isolation or not following out the latest ideas. Different great discoveries, such as the cause of consumption, due to Villemin and Koch, are due to men of different nationalities, each one having added something to the general store of knowledge. Dr. Lannelongue reminded his hearers that the first international congress had been held in France in 1867. He finished his discourse by citing the words of Bouilland, who had presided at this first congress, and by saying that never had such a harvest been seen, and it was time that it was well to gather in the seed which future generations would profit by. M. Mouis, the Minister of Justice, spoke on behalf of the government. Then Dr. Virchow and Dr. Pavlov also made discourses of some length.